Accounting Review

the Accounting Review

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The Accounting Review

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MANAGERIAL ACCOUNTING—TWENTY YEARS FROM NOW*

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BEFORE we try to imagine the possible uses of managerial accounting twenty years from now, we might well give some consideration to its actual uses today. There are a few misapprehensions on this point.

From some of the current literature on the subject one might suppose that management consists largely, if not entirely, of taking action based on the statements submitted by the accounting department. The inference conveyed by such writings is that the manager is a mere automaton, who can act only when he has read a report, and then does only what the report tells him to do.

This is absurd. From the vantage point of a good many years' experience in both management and accounting, I observe that while accounting reports facilitate good management they are certainly not its exclusive, or even its most important, component. They are of vital, but limited, usefulness.

A good accounting report often tells what's wrong, but seldom how to correct it. The figures frequently show who is incompetent, but not how (or whether) to replace him. The results may disclose cases of bad judgment in the past, but they offer little promise that there won't be others in the future.

It is characteristic of the accountant, however, to suppose that because he knows all about what *has* happened, something of what *is* happening, and even a little of what probably *will* happen next, he is thereby qualified to decide what to do about it, and also to get it done. The ablest accountants make no such mistake, but I have met so many who do that I have sometimes thought the following feeble paraphrase of Sir Walter Scott might be appropriate:

Breathes there the accountant, with soul so dead
He never to himself has said:
  "The boss is sure a stupid joe"?
Whose heart has ne'er within him burned
To prove how much more could be earned
  If they'd just let him run the show?
If such there be, go, mark him well,
He's been around enough to tell
  That even if you know it all,
Good management is something more
Than calling strikes and keeping score:
  You also have to hit the ball!

WHAT IS MANAGEMENT?

The fact is that while every manager must spend part of his time studying reports (albeit often reluctantly) the major part of his talent and effort is devoted to seeking answers to such questions as the following (with which his accountant can usually give him little help):

* Presented at the annual meeting of the American Accounting Association, Chapel Hill, September 2, 1953.

1. Shall we run the plant to suit the sales force, or sell our goods at the convenience of the factory?
2. When sales fall off, shall we continue production and accumulate inventory, or cut our volume and let costs rise?
3. When business picks up, shall we pass on costs savings in lower prices, or take a wider margin on present volume?
4. If a price decline is imminent, how rapidly shall we force a liquidation of inventory, through reduced purchases and cheap sales?
5. If our industry (or company) shows declining volume and margins, shall we make heavy investments in cost-reducing facilities, or shall we just wear out our old equipment, cash in our chips, and quit the business?
6. What volume-increases and cost reductions will actually be obtained from a proposed new machine or process?
7. How well will our trade like our proposed new product, pattern, package, or promotion?
8. Shall we push our new product onto the market before thorough testing and thus get the jump on competitors, or shall we proceed more cautiously and risk losing the initiative to others?
9. How much shall we depend on the advice of experts, and how much on the "horse sense" of our own executive group?
10. If we have a weak staff member, can we best afford to train him, transfer him, tolerate him, or terminate him?
11. If we have two executives who quarrel, how can we use them both effectively, or (failing that) which one shall we dismiss?
12. In controversies with labor, where is the the point at which we must risk a work stoppage rather than sacrifice a principle?
13. In disputes with customers, how far can we go in concessions offer rather than lose the sale, or the account?
14. How much is it worth to retain the cooperation and support of a staff member, a director, a lender, or a security-holder?

According to my observation, effective management of a large enterprise is most commonly a reflection of outstanding capacity in the following fields:

A. Human relations
B. Market judgment
C. Technical competence
D. Analysis and interpretation

In the exercise of these talents, the last is an aid to the first three, but not an adequate substitute for any of them. Accounting reports will make a good manager into a better one, but never a poor one into a good one.

Now all this is not to imply that baseball would be a satisfactory game without a box-score, expertly kept, or that an airplane can be safely operated without the best of instruments, carefully read and evaluated. It is, rather, to remind ourselves that analysis is not decision, that exhortation is not action, and that comprehension is not achievement. For managerial success, wisdom must be enriched with foresight, intelligence with leadership, and knowledge with skill, courage, and determination.

The accountant should approach his task with humility, recognizing that his job is chiefly to furnish an adequate kit of tools—well designed, strong, handy, and sharp. His fondest hope should be that he may serve a manager smart enough to select the right tool and skillful enough to use it effectively.

As toolmakers, then what can we develop, over the next twenty years, that will better equip our business executives to cope more successfuly with their often intolerably difficult problems?

AVENUES OF PROGRESS

When I began the preparation of this paper I was reminded of a talk on a similar subject I gave before another national accounting group nearly ten years ago. Then, as now, I was attempting to forecast developments in the managerial accounting field. I find that the suggestions I offered at that time can be grouped under four general headings, which seem equally appropriate for discussion today.

Managerial accounting activities which now, as then, strike me as most likely to be productive are the following:

1. Increased emphasis on what might be called "pre-accounting" studies—the preparation of budgets, the establishment of standards, etc.
2. Greater attention to intensive primary analysis of costs and expenses, to provide more finely subdivided and carefully shaped "building blocks" for subsequent cost determination and performance evaluation.
3. Closer study of the relationship between costs and prices, with particular attention to the distinction between recovery and out-of-pocket costs and contributions toward general overhead expenses.
4. Improved arrangement of financial statements, to clarify important internal and inter-statement relationships.

In these important areas what progress has been made in recent years, and what further advances seem probable during the next two decades?

PRE-ACCOUNTING TECHNIQUES

In the field of "accounting for the future" the developments have been highly gratifying. Budgets and standards, once regarded as esoteric manifestations, are now accepted as basic techniques, without which no large or complex enterprise should attempt to operate.

For the accountant the adoption of budgeting has been a most favorable development. It has transplanted him from the often sterile fields of past history to the fertile soil of planning and promotion. Management enlists his aid in projecting the probable results of policies and programs currently being studied as a basis for future activities.

This puts the accountant in the front line of the management team, where such imagination and foresight as he may possess can play a vital part in the development of sound plans for the future conduct of the business. Equipped as he can easily be with all the facts about the business, this is where he clearly belongs.

The importance of this accounting function can hardly be overemphasized. Managers, presidents, directors, bankers, and stockholders are interested chiefly in the future of the business, only incidentally in its past. From where we are, where do we go next? If certain plans are carried out, what can we expect in the way of volume, profits, taxes, cash accumulation, dividends, plant investment, inventory position, new financing, etc? Is this program financially feasible? Will it bring us the desired results?

Many accountants shrink from what one of my friends calls "fortunetelling." The accountant, they say, is supposed to deal in facts, not prophecy. It seems to me that both the term and the implied concept are misleading. It is not necessary to prophesy, but it is important to make "projections" of results and financial position, based on certain "assumptions" as to volume, prices, costs, etc. Their preparation is probably the most important service an accountant can render. Let me make the budgets, and someone else can keep the accounts.

The utilization of budgets and standards brings the accountant into the management picture in another very important way. These pre-established figures provide a basis of comparison between what was done and what should have been done. In business any accomplishment is significant only in relation to something else—mere "amounts" are of little interest to anyone except the fellow who did the arithmetic. Whatever was accomplished, was it as good as expected, as good as possible? Answer these questions, and you can focus attention on an otherwise dull set of facts.

Standards have another important place in modern management. They provide a basis for compensation varying with the results achieved. To get the best out of workers—whether they are executives,

salesmen, machine tenders, or clerks—set them a goal and pay them extra when they reach or exceed it. This plan is more rational, and more effective, than company-wide profit sharing, and deserves more of the accountant's attention than it has so far received.

EXPENSE ANALYSIS

In the field of expense analysis there must have been considerable progress, but there is not too much evidence of it in the literature which comes to my attention. Many concerns, for understandable reasons, are loath to change established bases of classification. Few will undertake a wholesale revision of a known and accepted "chart of accounts," and when they do their accountants seem not to consider it a subject worthy of public discussion.

A sound primary break-down of expenses is one of the most useful of accounting tools, and one of the most valuable aids of both interpretation and planning. A recent intensive study of this subject, in a large industrial enterprise, suggests the following conclusions:

> First: for adequate classification, each expense must be separately identified at least as to type (object) and as to function (activity), and possibly as to other characteristics also.
>
> Second: a pre-requisite to good classification is the establishment of major type groups and major functional groups, arranged in an integrated system permitting complete cross-analysis in either direction.
>
> Third: these major groups should be supplemented by such minor groups and individual accounts as may require recognition, either for expense control or for cost calculation.
>
> Fourth: expense reports and cost summaries should be so developed as to permit the separate identification of all component elements in each total or unit cost, according to both type and function.

An example may be helpful. In the enterprise just mentioned the major "type" groups selected were only three in number: (1) raw materials, (2) labor and supplies, (3) property carrying charges. These are the primary elements of expense in the performance of every operating function. In cost parlance, the first group consists of direct and wholly variable charges, the second of direct and largely variable charges, and the third of direct and wholly fixed charges. The usefulness of such a primary grouping will be obvious.

The components of the first group are the various raw materials consumed at successive stages of the process. The third group comprises only property insurance, property taxes, and depreciation. The second group includes all other *operating* expenses (interest, income taxes, and incidental items being of a non-operating character).

Minor divisions of this second group provide separate identification for such classes of expense as wages, salaries, social security, office and travel, outside services, purchased utilities, operating supplies, and incidentals. Individual accounts supply such further break-downs as appear warranted.

Using the twelve group sub-divisions above mentioned, it is possible (and often desirable) to report the entire cost of running the business in these simple, primary terms. The frequent calls for such information as total employee compensation, total "fringe" costs, total insurance charges, and the like give evidence of the usefulness of a classification of this type.

The major *functional* groups are those for the basic activities of research, manufacturing, marketing, and administration. Research carries subdivisions for experiment, design, and development projects; marketing for advertising, solicitation, service, credits, and collections; administration for company-wide staff activities like executive, legal, financial, industrial relations, public relations, etc. These are common-place and merit no special consideration here.

In the manufacturing group there are

subdivisions for production, utilities, services, and maintenance. Cost compilation consists of the progressive re-allocation of auxiliary department expense totals until all costs have been finally assigned to a productive function. The cost sheet for each production department then contains the following sections:

Materials and parts (direct)
Labor and supplies (direct)
Utilities (apportioned)
Services (apportioned)
Maintenance (allocated)
Property charges (direct)

For some purposes further condensation may be appropriate. In certain cost calculations, for example, it may be helpful to combine the six sub-divisions into three pairs of charges, calling them respectively (a) direct departmental, (b) utilities and services, (c) occupancy charges. Their individual significance will be readily apparent.

COST COMPUTATIONS AND COMPARISONS

With this basic information available, the computation of the cost of any individual product becomes a simple matter. In each successive stage of the processing, the calculation starts with the cost of the material (or part) utilized in that process. When this has been adjusted for yield, quality, and by-product differentials, an addition is made for the applicable processing cost per unit, to arrive at the accumulated cost up to the end of that process. Cost for the last stage of the process becomes the cost of the finished article.

In a plant where direct labor is a factor, that item normally should have separate recognition in the cost statement, and in the product cost calculations. This may require another section in the cost statement, with the succeeding "burden" charges sub-totaled and apportioned to the various components of the departmental output on some equitable basis.

One purpose of the preceding extended discussion of expense reporting is to demonstrate that informative cost analysis and orthodox cost accumulation are not incompatible (as some of the advocates of currently well-publicized "direct costing" procedures seem to imagine they are). It is obvious that if all manufacturing costs are dumped holus-bolus into a "work-in-process" account, with the "standard" cost of finished goods ultimately measured only as "X units at Y dollars per unit," the total remaining outlay being written off as a "production variance," there will be a good many missing links in the manager's chain of information. With adequate expense analysis and orderly cost accumulation all the links are there.

Twenty years from now, if my guess is any good, every studious manager will insist on cost reports which clearly disclose all the significant elements of every product cost. He will find it impossible to establish prices intelligently without this information.

To determine the profitableness of a schedule of prices, or the attractiveness of an individual piece of business, he will require something more than a composite total figure, reflecting chiefly the cost accountant's philosophy as to how overhead charges should be assigned and fixed charges absorbed. He will want each cost broken down (or built up) to show what fraction represents out-of-pocket outlay and what portion consists of a desired contribution to fixedoverhead. He will want to know at what points cost are directly applicable to individual processes, and to what extent they are apportioned charges for auxiliary services. He will have to understand the cost of running the business as well as the cost of making a product.

While cost standards are perhaps most important as indicators of how profitable a given price shedule should be, they are also invaluable as measures of how profit-

able it actually is. The manager is concerned first with how much he should make under specified conditions (margins at standard) and second with how much he actually did make (amount and nature of variances).

The possibilities of variance analysis are still relatively undeveloped. In addition to standards for product costs (used for pricing, inventory, and income determination), there may well be standards for departmental operating expense (used for measuring performance of the department supervisor). Thus the variance analysis may disclose not only deviations from standard cost per unit of product manufactured but also deviations from "allowed" expense per machine-hour run, per man-hour of service rendered, etc.

Standards may be established for service as well as production activities. A storeroom may have a standard based on quantities handled or requisitions filled. A mechanic shop may have a standard overhead rate per hour of maintenance performed. The tabulating section of the accounting department may have a standard cost per transaction recorded. The billing office may have a standard cost per invoice or per item billed. Variances will disclose efficiency of departmental performance, which may be even more important twenty years from now than it is today.

APPROXIMATIONS AND ARBITRARIES

All these devices, useful though they unquestionably are, have one common weakness. They tend toward over-elaboration of accounting and reporting procedure, and thus toward making it both cumbersome and costly. Accounting must strive for simplification and economy as well as for specialization and broader coverage.

A promising development in this field is the increasing use of statistical approximations in the measurement of costs and values. It is apparent that without distortion of essential facts we can go much farther in this direction.

Examples of the roughest sort of approximations are constantly before us—in the calculation of depreciation allowances, in the valuation of manufactured products at standard costs, in the assignment of over head charges to individual products or processes, in the employment of LIFO in computing inventory movement, etc. Why extend to minor internal measurements a refinement in calculation that we cheerfully disdain in the major aspects of income and value determination?

Pioneers in the field of statistical approximation are discovering that in measuring the utilization of many supposedly diverse items group average costs are as dependable and meaningful as painstakingly recorded individual unit costs. Possible applications of this technique are numerous and intriguing.

For example, labor costs often can be distributed to jobs (or products) at the average rate per hour prevailing in the department, rather than at the individual rate paid to the worker actually employed on that job. Under such a plan job-order time distributions (e.g. for maintenance work) can be made in hours only, with the monthly charge determined by charging each job with total hours worked at average rate including (if desired) an allowance for average fringe benefit costs.

Application of the same principle to operating supplies, and to ordinary maintenance and repair materials, is now under active study. Why spend money figuring the cost of each piece of sheet metal, each board, and each pipe fitting, for charge distribution purposes, if a composite average price for each class of items will give substantially the same result? Some of the recent literature on this

subject is challenging and suggestive.

Even where the statistical analysis necessary as a background for such procedures has not been completed (and it's quite a task) numerous "short cuts" are available to everyone. Here are a few which are being used successfully in concerns with which I am acquainted:

(1) Cents are eliminated in all internal accounting records, no amounts being figured closer than the nearest even dollar except in the accounts for cash, receivables, and payables.
(2) All internal transfers (of materials, labor, and supplies) are made at standard costs, with variances at each point of transfer suitably reported and explained
(3) Operating supplies consumed are charged to expense at the cost of the latest purchase, with variances adjusted when physical inventories are taken.
(4) Minor supply purchases are charged to operating expense as made, with inventories either ignored or carried at a flat sum representing estimated average inventory value.
(5) Fringe cost elements are eliminated from unit cost calculations (e.g. all inbound freight, sales tax, and stores handling expense, are carried directly to operating expense as overhead charges and not incorporated in material unit costs as such).

Items like depreciation, taxes, and insurance can be similarly handled. In one company, for example, the monthly property carrying charge to each department is figured at $\frac{1}{4}\%$ for building depreciation, $\frac{3}{4}\%$ for equipment depreciation, and proportionate allowances for taxes and insurance. If the sum of these monthly provisions fails to equal the annual total of such charges (arrived at on an item-by-item basis in the computation of tax returns and insurance reports) the difference becomes simply another item in the "production cost variance" account.

TIMELINESS

Procedures of this sort are often somewhat shocking to the meticulous accountant, who abhors anything that savors of carelessness or inaccuracy. Let me point out that the suggested techniques relate only to the determination of the amounts of various internal charges, and not to the precision with which the charges are recorded.

No one is fussier than I am about the exactness of expression of all accounting data; discrepancies in entries, item identification, or inter-statement relationships are intolerable. There is a sharp distinction, however, between the mechanics of accounting (a precise routine) and the philosophy of valuation (an abstract concept). Perhaps another twenty years will see this distinction more widely understood.

Even if the worth of an asset, or the amount of a profit, could be determined with anything approaching exactness (which of course it cannot) there would not be time for it in the ordinary processes of management. Reports must be timely, or for managerial purposes they are valueless, no matter how accurate. A good executive has been described as a man who can decide quickly and sometimes right. A good accountant might be described as one who can report promptly and be somewhere near right.

Approximations and short-cuts are necessary to prompt reporting. The pre-determination of numerous "bases of charge" is essential to quick completion of reports to management—always needed at least monthly, and often weekly, or even daily. Standard valuations for internal transfers become indispensable. The basis used for inter-department distributions must always be one obtainable before the close of the period. Day-by-day accumulation of quantitative data may be necessary to quick determination of period totals. A time-table and deadlines are essential to reporting that will be genuinely useful to management.

The accountant who is really alert to his opportunities will go still farther. From the study of the data available to him he will distill out certain "key" figures, available daily, or at other frequent intervals, which will provide the essential clue to the size of the profit being currently earned. He will soon be able to predict the trend of earnings before the income statement is prepared.

He must be sharp and fore-handed if he succeeds in doing this before the manager does it for himself. Most men smart enough to become top executives are keen enough to detect the evidences of progress or deterioration in the day-to-day operations of their business. They soon develop some private measures of their own (jotted down in pencil on the back of a discarded envelope) which may forewarn them of what the income statement will show a couple of weeks before the accountant gets around to preparing it.

No accountant wants to be (or needs to be) humiliated by having the boss guess all the answers before he brings them in. The capable accounting officer of two decades hence will surely learn how to make those estimates soonest and closest, and will make their transmittal an important part of his service to management.

FINANCIAL STATEMENTS

The manager's work is made up of hundreds of individual judgments, decisions, and actions, each directed to some one aspect of the company's operations. The final summation of the over-all result of his efforts is presented in the periodic financial statements. These should include an income account, a balance sheet, and a cash statement, with whatever supporting schedules will be helpful to a full understanding of the progress made and the position reached.

In many directions the corporation accountant has been progressing rapidly toward greater usefulness to management. If this progress has extended to improved presentation of results and position data, for internal use, it is not apparent in published financial statements. Since such statements are prepared for the information of security-holders and the general public, it may be unfair to criticise them as unsuitable for managerial interpretation, but they do suggest some lack of attention to this important subject.

Where there have been changes in the arrangement of financial statements in recent years they have been most commonly in the direction of emphasis on the stockholders' participation in the enterprise rather than on the accomplishments of the enterprise as such. These changes include a mild trend toward arranging the financial position not as a balance sheet but as a progressive calculation in which liabilities are deducted from assets with the final residual identified as the stockholders' equity. In the income statement there has been a somewhat stronger trend toward presenting net income as the residual of a single-step calculation, in which all offsets to gross revenue (product costs, operating expenses, interest distributions, and income taxes) are added into one total and subtracted to arrive at the supposed gain to the stockholder.

Whatever such forms of presentation may contribute to good public relations (and this is not the occasion for a discussion of that subject), they are clearly objectionable from the viewpoint of managerial interpretation. They obscure, rather than illuminate, the facts of greatest significance in the evaluation of managerial performance.

To appreciate this, it is necessary first to recognize that management activities fall into two broad and independent categories, as follows:

(1) Utilization of resources (assets) in the production of income (profit), appropriately

referred to as "operating" management.

(2) Distribution of income (interest, dividends, and re-investment) among the equity-holders (creditors and owners) to the greatest ultimate advantage of the latter group, a task properly described as "financial" management.

Responsibility for both aspects of management is sometimes lodged in the same individual or group (though more commonly the functions are somewhat independent), but in any event they are separate tasks and must be separately considered. It would be dangerously confusing to let the good results of effective operating management be concealed by the errors or misfortunes of financial policy, and it would be equally hazardous to over-rate poor operating performance because of a favorable financial situation.

To evaluate the separate accomplishments of the two "sides of the house" it is essential to arrange the financial statements to disclose (a) total assets employed, and the share of that total attributable to each class of equity, and (b) income from operations, and the share of that income allocated to each of the various classes of participants.

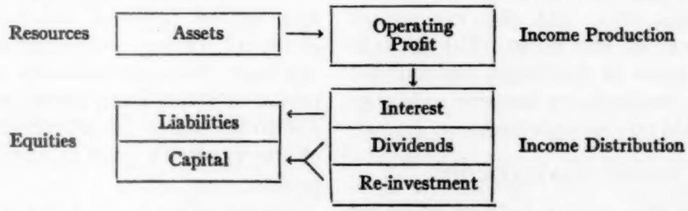
The requisite arrangement of the data, reduced to its simplest terms, can be illustrated by the following diagram:

management performance that it is hard to understand why they receive so little emphasis in managerial accounting discussions.

To the operating manager, the vital facts are the amount and kind of property put at his disposal (asset values by classes), the extent of the utilization attained (volume and turnover), and the operating margin derived (operating income per unit and per dollar of revenue). The composite of these factors is the yield obtained from the assets employed (rate of return on total capital).

To the financial manager, the important issues are the proportions of capital to be obtained from various sources (trade obligations, short-term loans, funded debt, paid-in capital, and accumulated earnings), the terms necessary to attract each type of capital (rate of return, maturity, and amortization), the extent to which owner-return can safely be magnified by the use of low-rate borrowed capital (trading on the equity), and the allocation of net income between distributions to stockholders and re-investment in the business (dividend policy).

It would seem to go without saying that financial statements for management use must be arranged to emphasize the important elements in these two distinct (though related) aspects of business activity. This does not necessitate the form of illustration presented in the diagram (though it has considerable merit), but it does require the identification of all the major elements in the equation.



The relationships above indicated are not optional or contrived; they are basic and inherent in all business operations. They are not mere concepts, to be either accepted or rejected; they are facts, which must be either recognized or ignored. They are so fundamental to an interpretation of

The balance sheet must show total assets (some published today do not), and the income statement must bring out the profit before interest and taxes (many current ones seem designed to obscure rather than emphasize this item). With that information available, the accountant can readily calculate and report the significant relationships (ratios and percentages) which are necessary to an evaluation of both features of management performance.

What about income taxes—are they an operating expense or a distribution of profit? There are theoretical arguments on both sides of the question, but the practical considerations all point one way. It is virtually impossible to develop a sound analysis of operating management performance in which income taxes are permitted to become an element. To plan, to control, to measure, and to interpret *operating* results, income taxes must be considered a necessary evil of *financial* management. Space does not permit the recitation of the proofs of this assertion, but the managerial accountant of the future should find them conclusive.

Let me add a brief word in favor of the cash statement as an essential feature of financial reports. Business is done with cash, to produce cash. The manager should never forget this, and the accountant should never let him do so. Without cash there can never be dividends, and without dividends stockholders become unhappy. They should not be neglected.

INCOME MEASUREMENT

With all the current excitement about how income should be measured (and assets valued) it may seem odd to relegate such questions to a place of minor importance in a consideration of the problems of managerial accounting twenty years from now. Income measurement, however, is a matter of philosophy rather than technique, and I have conceived of the managerial accountant (like the manager himself) as being primarily a technician, and only incidentally a philosopher.

As to various income measurement devices, my own convictions have been fairly well publicized, but I have no reluctance to re-state them whenever the occasion offers. Summed up, they come to something like this.

The primary measurement of income should continue to be according to the time-honored formula, in which all dollar costs originally incurred are ultimately deducted from dollar revenues received, to determine residual dollar profits. This primary measurement may well be supplemented by secondary calculations in which replacement costs are substituted for actual dollar outlays, to develop what might be termed "economic" profit. Still further calculations may be made to adjust the entire set of financial statements to a current "purchasing power" basis, though such calculations seem unlikely to be either useful or particularly interesting.

The essential problem is one not of philosophy but of practical financial management. If dollar profits are inadequate to pay attractive returns on capital and simultaneously to permit re-investment sufficient to replace exhausted inventories and retired facilities, what do you do about it? Having confronted the problem, not once, but continuously over a long period of years, I can assure you that it is not to be solved by changing the length of the yardstick used to measure current profits.

On the other hand, I feel strongly that there should be far more latitude than is conventional in determining the rate at which property acquisitions are written off in measuring the earnings of interim periods (a few years out of a business lifetime). I believe that accounting principle should be extremely rigid as to *what* is to

be charged and extremely flexible as to *when* it is to be charged. When it comes to determining how much of the value of an asset has been exhausted, or what fraction of its cost must be assigned to revenues realized, managerial judgment is frequently superior to accounting conventions, and should receive greater weight.

As an indication of what I consider a sound approach to the income measurement problem, let me offer, as a concluding feature of this paper, some proposals contained in an unpublished report which I recently prepared for a group studying this subject. They run as follows:

1. A major objective of accounting is the determination of the net money income of the subject enterprise. All other income determinations are collateral and incidental to this primary purpose.
2. Over the entire life of the enterprise total net income is the difference between (a) total money revenues received and (b) total money costs incurred.
3. For the life of an enterprise from origin to any given date, net income is the difference between (a) cumulative revenues realized, through reduction to money or its equivalent, and (b) cumulative costs incurred, representing the portion of money spent not reasonably assignable to prospective income producing activities of future periods.
4. For any specific interim period, net income is the difference between cumulative net income to date and cumulative net income to the end of the last preceding period.
5. The portion of total costs assigned to any current accounting period may be increased, within the reasonable discretion of owners, managers and accountants, by (a) accelerating amortization of costs incurred, to reduce the balance chargeable to future operations, (b) substituting costs of recent acquisitions for those of earlier ones, to reflect the higher level of current costs, (c) writing off part of the cost assigned to assets held for sale, to reflect reductions in anticipated realizable value.
6. While the fraction of total costs assigned to future periods thus may be lessened, this remainder must never be more than a pro rata share of the original cost equivalent to the unconsumed, unexhausted, or unrecovered portion of the assets in question, as determined by objective physical measures.
7. Costs once charged against income may never be reinstated in the accounts, or reassigned to the income of a future period. There can be no "correction" of past income determinations, made in good faith, according to the best information available at the time.
8. Statements should contain full disclosure of the basis of cost amortization and the amounts involved. Estimated replacement cost of assets consumed or exhausted within the current period (and of those remaining to be recovered in future periods) may be shown in supplementary financial statements of suitable type.

The general public, the owners of securities, the managers of enterprise, and accountants themselves, all need a better understanding of the nature of interim income measurements. Even those made by the most orthodox methods must be recognized as the products of theory, convention, and estimate. It will be, in my opinion, more wholesome and practical to identify them clearly as combined expressions of managerial judgment and accounting allocation, than to ascribe to them such attributes as "truth," "correctness," and "accuracy," which they demonstrably do not possess.

Perhaps during the next twenty years that will become better understood.

ACCOUNTING CORRECTIONS

SUPPLEMENTARY STATEMENT NO. 5*

Committee on Concepts and Standards Underlying Corporate Financial Statements

Paragraph No. 5 under "Expense" in the 1948 Revision of Accounting Concepts and Standards Underlying Corporate Financial Statements reads as follows:

> "An assignment of all or a portion of the cost of an asset to expense, made in good faith after considered judgment and after competent review, in accordance with the accounting concepts and standards of the time, is not subject to reversal in a later period. Errors of a mechanical and nonjudgment nature should be corrected in the period of their discovery."

Because this paragraph deals only with errors in cost amortization and not with errors and mistakes in general, and because questions have been raised as to its applicability in such special circumstances as the recovery of foreign assets written off as lost, the Committee on Concepts and Standards has undertaken to review its content.

The Committee is in agreement with the apparent basic purpose of this statement to reduce the possibility of manipulation of the net income calculation through reversals, revisions and reaccounting of past depreciation charges and other amortizations. At the same time it recognizes that a position unalterably opposed to the correction of errors of judgment is both arbitrary and difficult to defend.

It appears, for example, that under the terms of the 1948 Statement assets once written down because of wars or other major political developments cannot be reinstated although subsequent events may demonstrate beyond question that information or presumptions at the time of the first decision were erroneous.

The Committee is of the opinion that effective prevention of income manipulation can be obtained without requiring the continuation of known material errors of this kind in the accounts and reports.

On the other hand, routine and recurring periodic provisions for depreciation and amortization made in good faith after considered judgment and after competent review should not be reversed, even though such action is seemingly justified by changes in the acts or by later estimates of usefulness or longevity. The better course is to review these policies from time to time and to make the resultant adjustments by altering the rate of amortization of remaining balances.

Consequently, the Committee believes that the following restatement of this paragraph of the 1948 Revision is appropriate:

> To the extent that specific material errors exist in the accounts, the data to be obtained from the accounts have lost a portion of their usefulness, integrity, and reliability. Therefore, errors of a mechanical and nonjudgment nature should be corrected in the period of their discovery. Furthermore, if new events which are of special and unusual character and significant in their potential effect on future income prove past judgments to have been erroneous, correction of judgment errors also is proper.

Statements of the Committee on Accounting Concepts and Standards represent the reasoned judgment of at least two-thirds of its members. They are not official pronouncements of the American Accounting Association or of its Executive Committee.

They shall not necessarily be viewed as stating rules of current professional conduct or procedure. Rather, they state objectives in the de-

* December 31, 1953.

velopment of accounting principles. Some are intended to have immediate applicability, while others forecast the general direction in which accounting may develop.

Committee on Concepts and Standards
Underlying Corporate Financial
Statements—1953

Robert L. Dixon
Thomas M. Hill
Joseph B. Lanterman
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INVENTORY PRICING AND CHANGES IN PRICE LEVELS

SUPPLEMENTARY STATEMENT NO. 6*

Committee on Concepts and Standards Underlying Corporate Financial Statements

Prefatory note

One of the functions of this Committee is to conduct studies looking toward the long-range evolution of accounting. In Supplementary Statement No. 2 the Committee considered the influence of fluctuating values of the dollar on accounting results and recommended experimentation with techniques designed to recognize and adjust for price-level changes. This Supplementary Statement No. 6 is a continuation of studies in that area. Recommendation (6), for example, is contingent upon the assumption, yet to be established, that financial reports prepared from accounting data will in time give recognition to material changes in price levels.

* * *

With respect to inventory pricing, the Executive Committee of the American Accounting Association in its 1948 revision of "Accounting Concepts and Standards Underlying Corporate Financial Statements" makes the following statement:

> For the purposes of determining the expense of a period it is acceptable to assume a flow of the cost of inventoriable items, for example, "first-in, first-out." The residual cost should be carried forward in the balance sheet for assignment in future periods except when it is evident that the cost of an item of inventory cannot be recovered, whether from damage, deterioration, obsolescence, style change, over-supply, reduction in price levels, or other cause. In such event the inventory item should be stated at the estimated amount of sales proceeds less direct expense of completion and disposal. This concept of residual cost may be applied to inventory items, a group of inventory items, or to total inventory. The method of inventory costing should be consistent from period to period and should conform reasonably with practices established within the industry or trade.

Because this quotation gives no consideration to the differences in results obtained by various assumptions as to the flow of costs, and because wide variations exist in practice, the Committee on Concepts and Standards believes it desirable now, by means of a Supplementary Statement, to express its views on the "flow-of-costs" aspects of this quotation.

CONCLUSIONS AND RECOMMENDATIONS

(1) Ideally, the measurement of accounting profit involves the matching precisely of the identified costs of specific units of product with the sales revenues derived therefrom.

(2) Where conditions are such that precise matching of identified costs with revenues is impracticable, identified cost matching may be simulated by the adoption of an assumed flow of costs.

(3) A flow assumption can be *realistic*, in that it reflects the dominant characteristics of the actual flow of goods; thus it may reflect an actual dominance of first-in, first-out (FIFO), average, or last-in, first-out (LIFO) movement. A flow assumption can be *artificial*, on the other hand, in that it premises a flow of costs that is clearly in contrast with actual physical movement.

(4) The LIFO flow assumption now has

* December 31, 1953.

wide usage although in very few, if any, instances of its application can the assumption be justified on the ground that it corresponds even approximately with the actual flow of goods. *Artificial LIFO* has appeal to some during periods of markedly changing price levels as a means of approaching a matching of current costs (dollar costs adjusted to reflect changes in the general purchasing power of the monetary unit)[1] with current revenues; however, grave doubt exists as to whether the accuracy of such artificial matching is sufficient to justify the resultant departure from realism. Present use of the method should be considered a transitory step which may ultimately be supplanted by better methods of accomplishing the intended result.

(5) For the present it is recommended that where LIFO is used for reporting purposes there also be revealed in the financial statements figures as to inventory valuation, and related operating costs (including tax effects), on a "realistic" basis as defined above, in order that reasonable comparisons may be made with the data of other companies.

(6) It is recommended that if and when techniques for reflecting in accounting reports the impact of changes in the general level of prices have become generally accepted, the *artificial LIFO* method be abandoned entirely for reporting purposes in favor of a realistic flow assumption.

DISCUSSION

The periodic income of a business enterprise is computed by deducting from the revenues of the period the costs which are properly associated with those revenues. In the case of certain costs, for example sales commissions, the relationship to the revenues of a period is quite direct and the matching process is accomplished with a minimum of uncertainty. In the case of many other costs, such as certain clerical wages, no clear-cut relationship exists except that the costs and revenues both have materialized during the same period.

First analysis of the nature of costs of merchandise and finished product would appear to place such costs rather clearly in the category of items of direct matching, since the delivery of a unit of merchandise normally leads to the immediate recognition of a measurable amount of revenue. However, it is well known that no class of costs is subject to greater diversity of treatment, and perhaps no class of costs has received as much attention in discussion and debate.

As an approach to formulation of standards in this area, one premise is considered to be basic and unquestionable. Profit, as related to inventories, arises from the acquisition of productive factors followed by their disposition. Except in the cases of certain windfall gains, both events must occur for profit to be recognized.

Identified Cost

A corollary to the assumption that the two events, acquisition and disposition, must occur as a prerequisite to the recognition of profit is that income, positive or negative, should be recognized upon the culmination of the pair of events. Further, it follows that the greatest accuracy will be attained in those cases in which the cost of the specific item sold is matched with the proceeds of the sale. In other words, the ideal situation from the standpoint of the determination of accounting profit is that in which the costs of identified assets are matched against the revenues resulting from their sale.

Appraisal of the Identified Cost Procedure

It is often argued that the identified cost assumption is unsound because it

[1] See Supplementary Statement No. 2, for a discussion of the aims and techniques of adjusting historical dollar costs.

may allow an element of direct control over profit by allowing the seller to choose from a group of homogeneous items the specific article to be transferred to the customer. It is believed by some that accounting rules should be devised to forestall the possibility of manipulating the profit figure by the process of selecting, from a supply of identical objects, the one that has a historical cost which best fits the profit (or loss) desires of the moment.

While this objection to the use of identified cost does carry some weight, it should not be overemphasized. All business decisions are the outgrowth of alternative choices, and each such decision, once made, tends to limit the range of choice remaining. Moreover, the opportunity to influence profits through the selection of items from a homogeneous stock is in general less prevalent than is that of choosing from among similar though nonhomogeneous items; one hears no objection, however, to the precise matching of the costs of differentiated products with the sales revenues which they produce.

A more potent objection to the identified cost method of determining product cost of sales lies in its impracticality. Certain products, because of their physical characteristics, cannot be identified with their invoice costs; others could be so treated but only with unreasonable effort. On the other hand, a vast array of products can readily be identified with their individual costs, and no objection appears to exist with respect to the practice in such cases.

Appraisal of First-in—First-out

The so-called FIFO method of inventory valuation possesses three attractive characteristics: First, in the great majority of cases it so nearly approximates the physical movement of goods that the actual differences in flow can be ignored; second, it eliminates all possibility of influencing profits through selection of individual items from a homogeneous inventory or through the mere expansion or contraction of inventory quantities; third; the method produces a balance-sheet quantum which is, in general, a reasonable reflection of the current market.

The principal objection to FIFO is its failure to compensate for changes in the price level. It is observed that in those cases where inventories are a material factor in the determination of annual earnings the costs charged against the year's revenues may, when prices change, produce an effect upon profits which appears erratic. Thus, low costs may be matched against relatively high selling prices and vice versa. The effect produced during periods of steeply rising prices is often described as one of "fictitious inventory profits."

With respect to this point, it should first be noted that, in the absence of changes in the *general* level of prices, the so-called inventory profits are as real as are the profits under any conceivable set of circumstances. Clearly such profits may not be disbursable as dividends if the business is to maintain its level of physical stock. The fact, however, that a portion of the profits must be retained in the business because of higher costs of inventory in no way denies the validity of the profits as such. *To argue otherwise is to confuse profit determination on the one hand with financial management on the other.*

When, on the other hand, the general price level has undergone change it is evident that historical FIFO has distinct limitations. Significantly, however, the defect is not implicit in the FIFO assumption but rather in the adherence to historical dollar symbols.

Other Flow Assumptions

Under rather specialized conditions the identified cost ideal may more nearly be

approached practically through the use of averages or even through the last-in, first-out assumption. While such conditions are admittedly rare, the possibility of thorough physical mixture of certain products, leading to the practical assumption of a weighted-average flow, and the possibility that over long periods the most recent purchases may be the first sold, cannot be dismissed. In such cases the use of a corresponding accounting treatment is sound except, as was noted in the discussion of FIFO, to the extent that historical dollar figures may create a false measure of earnings.

Artificial Assumptions

The rationale of the flow assumptions discussed so far stems from the fact that the assumed flow of goods approximates the actual physical movement closely enough to warrant the disregarding of differences. As has been noted, the principal defect of such systems, including the plan of matching identified costs with sales revenues, lies not in the matching process itself but rather in the commingling of raw dollar data of various purchasing power capacities. The result, during periods of sharp price movements, is one of erratically fluctuating profits, with a definite bias toward overstatement of real profits during periods of general price increase, and understatement during periods of general price decline. In some instances the tax consequences are extremely significant.

In part to ameliorate this distortion of the reported profit figures, and in part to soften the impact of taxes, recent years have witnessed an accelerating movement toward the adoption of admittedly artificial flow assumptions. The most noteworthy of these is *artificial LIFO*.

LIFO

Although the plan is subject to modifications in detail, LIFO consists of assigning to the balance of goods on hand at the end of the year a valuation which represents the oldest recorded historical costs at which the existing goods could have been purchased since the adoption of the LIFO method.

The effect of LIFO is to charge against the revenues of the year the historical costs of goods purchased from the time of the year-end back through a period long enough to encompass acquisition of goods equal to the quantity sold during the year.

In an appraisal of LIFO certain points are especially to be noted:

(1) To the extent that price changes of the goods under consideration match changes in the general level of prices, the resulting profit figures are theoretically superior to those attained by realistic flow assumptions unadjusted for price-level changes. To the extent, however, that the price changes do not so move in parallel fashion, the *artificial LIFO* method may easily exaggerate, conceal, or even show in reverse, real gains and losses.

(2) The inventory valuation which results from *artificial LIFO* may become so far out of date as to be seriously misleading especially when no disclosure is made of the current market value of the inventory. For this reason the Committee has proposed that when LIFO is used there be reported in the financial statements figures showing the inventory valuation and the operating costs (including tax effects) on a realistic basis.

(3) The LIFO method is peculiarly open to the charge that through its use the periodic profits can be influenced to a substantial extent by the expedient of contracting or expanding the inventory quantities. Otherwise stated, it is literally true that up to the end of the year, management, under LIFO, has considerable leeway in deciding what the cost-of-goods-sold figure for the year shall be. In an

extreme case, at the very end of the year, a quantity of goods equal to the entire quantity sold during the year could be acquired and such last-minute purchases would, under this artificial flow assumption, be treated as if they were the goods actually sold during the past twelve months. In reverse, the inventories are subject to intentional depletion for the purpose of influencing the profit figure.

While the opportunity to influence profits in this way does exist under LIFO, it is reasonable to assume that management ordinarily would not risk putting the inventories in an unbalanced condition simply for the purpose of achieving a better income statement result; however, it should be noted that the opportunity in this respect is far greater than is alleged to exist in the use of identified cost.

(4) Given temporary involuntary depletion of LIFO inventories, reported net income for the period or periods of depletion receives the full impact of all previously unrecognized price gains or losses pertinent to the inventory reduction and may, as a result, be grossly misleading as an index of current performance. This reinforces the Committee's conclusion that an up-to-date valuation of the inventory should be regularly disclosed.

In summary, it is the belief of the Committee that *artificial LIFO* has some usefulness at the present time provided adequate standards of disclosure are utilized. However, strong effort should be applied to experimentation with techniques of price-level adjustment and if techniques eventually are commonly adopted for reflecting in accounting reports the impact of price level changes, the *artificial LIFO* method should be abandoned entirely in favor of a realistic flow assumption.

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Committee on Accounting Concepts
and Standards
1953

Stewart Y. McMullen, Chairman
Robert L. Dixon
Thomas M. Hill
Joseph B. Lanterman
R. K. Mautz
Maurice Moonitz
Maurice H. Stans

Dissent of Joseph B. Lanterman

Mr. Lanterman is not in agreement with the presentation set forth above. He feels that strong efforts should be made to develop techniques of price level adjustments in the measure of profit derived in the operation of business as reflected in corporate financial statements. It is his opinion, however, that none of the current practical accounting procedures based upon an assumed flow of costs exactly follows the flow of goods. And, consequently, if pertinent supplementary information is given in connection with the corporate financial statements, the benefits from the use of LIFO in approximating the result of matching current costs with current reviews should be recognized.

Dissent of Thomas M. Hill

Mr. Hill concurs with the other members of the Committee on the following points:

(1) The last-in, first-out method of inventory pricing represents basically a technique for matching against current revenues a reasonable approximation of the costs incurred in replacing the goods sold during the period. (The fact that substantial inventory fluctuations may yield more complex earnings effects than here implied does not invalidate this definition of objective.) Since LIFO is rarely, if ever, a realistic approximation of the actual flow of goods, it is not properly regarded as simply one alternative means for arriving at the historical outlay cost of goods sold. The common tendency to treat it as such has helped to obscure the fact that LIFO actually re-

flects a radically different concept of periodic earnings determination.

(2) The non-comparability during periods of rapid price change of LIFO- and FIFO-based earnings figures, coupled with the fact that LIFO inventory valuations may be meaningless for some analytical purposes, calls for disclosure by LIFO users of supplementary inventory valuation data adequate to permit of meaningful inter-company performance comparisons. Disclosure by FIFO users of data relative to inventory re-valuations such as, for example, write-downs to "market" would, by the same token, be equally desirable.

I disagree with the majority of the Committee, however, in that I am unwilling to view adjustment of historical outlay costs for changes in the purchasing power of the dollar as measured by a general price index as the only acceptable means for coping with the problem of fluctuating price levels. To my mind, acceptance of the criteria proposed in Supplementary Statement No. 2, which were advanced as a basis for experimentation, would be premature. I feel that the soundness of recommendation 6 urging ultimate abandonment of the LIFO method hinges primarily upon the adoption of those criteria.

Despite its remaining technical deficiencies, which are certainly not entirely insurmountable, the LIFO method represents an alternative approach which has gained considerable acceptance in practice. I agree that this acceptance has been conditioned very largely by prospects of immediate tax advantage, and I doubt that the majority of LIFO users have given careful consideration to its conceptual implications. I believe, nevertheless, that the substitution of "current cost" (i.e., approximate present replacement cost) for historical outlay cost as a basis for earnings determination must be recognized as a potentially generally acceptable development in the evolution of accounting concepts.

The present requirements appear to me to be three-fold:

first, general recognition of the LIFO method as a departure from historical costing;

second, development of and experimentation with, on the one hand, a comprehensive "current cost" theory embracing the operating statement effects of LIFO and, on the other, an "adjusted historical cost" theory along the lines proposed in Supplementary Statement No. 2;*

third, comparative evaluation of the logical structures and practical informational contents of the "conventional historical cost," "adjusted historical cost," and "current cost" definitions of periodic net income.

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* Results of studies relative to the practical application of "adjusted historical cost" conducted under the joint auspices of the American Accounting Association and the Merrill Foundation for Advancement of Financial Knowledge should be available in the near future.

THE FACULTY RESIDENCY PROGRAM

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Chairman, Committee on Internship Program

For several years programs of student internships have been available at certain institutions and through certain firms for the benefit of both students and employers. While the details of the programs have varied, the essential features are somewhat as follows: the student (usually in his senior year) leaves his school for six to twelve weeks and enters the office of the participating firm (usually a public accounting firm). During this period he engages in the usual operations of a junior in the firm. He is compensated for his work, and at the same time he may or may not be given some academic credit by his school. The results achieved by these programs have been generally very satisfactory and their continuation seems assured.

Because of the success of the student internship program it was doubtless inevitable that a similar program for accounting faculty members should be proposed. The purpose of the program would be (a) to provide those without practical experience an opportunity to become familar with the details of actual accounting practice, and (b) to offer an opportunity to those with accounting experience either to broaden their experience or to refresh it. The possibility of developing such a program became manifest early last year as the result of informal conversations among officials of the American Accounting Association, the American Institute of Accountants and the Controllers Institute. At the request of the Joint Committee on Education of the Association a notice was inserted in the Teachers Clinic section of the July issue of the Review. This notice, among other things, requested faculty members interested in temporary accounting employment to signify their interest by replying to the editor of the Teachers Clinic. The response, while not overwhelming, was at least encouraging.

Further conversations were held among the aforesaid Institutes and the Association. Then, in September of 1953 the American Institute of Accountants asked a selected group of its members for statements of their views concerning the proposed faculty program. The replies from this inquiry were in the main favorable to the program. With respect to the period, very few firms expressed willingness to cooperate for periods as short as three months. Particularly was summer work abhored because the experience would not be typical of most public accounting work. A few firms felt that one year was the absolute minimum. Where compensation was mentioned, that of the junior accountant was usually indicated. Part time work was rather generally decried. Those who declined to join the program did so for several reasons, but some of these reasons may tend to disappear as the program develops. Thus we have an objection to the use of a client's materials and property as testing grounds for temporary employees, and another respondent was uncertain about the maintenance of the necessary confidences. These, then, were the reactions of the public accounting firms, which reaction, it is emphasized, was on the whole quite favorable.

Turning now to another experience, on December 24, 1953, the Controllers Institute sent to each of its members a questionnaire to determine their willingness to participate in a program of temporary em-

ployment of accounting faculty members. At the time of this writing, the results of this inquiry are quite sketchy. However, on the basis of replies thus far received about 4 per cent are unwilling to participate. When it is considered that these companies are largely industrials having relatively little experience with internship programs, this percentage seems small indeed. It may also be true that some of these rejections come from companies whose contracts are classified by the Government and whose employees must be extensively investigated. The remaining replies indicated an immediate desire to participate or a willingness to discuss further the various aspects of the program.

So much for the industrial company reaction which, as stated, was drawn from very inadequate data. Of interest to the faculty member are the many areas in which work may be available. In the public accounting firms there is the usual auditing work plus the possibility of specializing in some tax work. In individual industrial concerns there may be opportunities for concentrating in general accounting, cost accounting, internal auditing, internal control, budgeting, analysis, etc. Also, the possibility of undertaking specialized studies for the individual employer while on the job may be of some interest to participants. The type of work available will doubtless vary with the amount of time the individual faculty member is to be in residence in the office of the company or firm, and the interests of those involved.

In conclusion, the reaction to the proposed faculty residency program has been sufficiently favorable to encourage our Association to participate in the actual arrangements for contacts between interested faculty members and participating firms and companies. An announcement concerning this appears in the Teachers Clinic section of this issue of the REVIEW.

OLD AND NEW IN MANAGEMENT AND ACCOUNTING

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AS AN APPROACH to comparing the old and the new, we might first take note of some familiar modern ideas about good management and adequate accounting.

In order to operate an enterprise well, management will need to plan future operations and maintain close control over materials and activities. One of the most useful techniques of planning is forward budgeting. Its figures will be based on known intentions decided by high-level authority and on knowledge of the results of prior activities that grew out of prior planning. This necessary knowledge derives from detailed records (i.e. accounting) periodically compacted into summary reports.

Of the many techniques of managerial control, several can perhaps be called essential. 1. Set up an operating organization and carefully provide for subdivided duties. It may be helpful if production standards are established as a guide to workers and supervisors. 2. Provide trained personnel, plus suitable supervision, frequent inspection, etc. 3. Tie record-keeping into the operating activities. This will call for establishing a system of internal check and a systematic testing of the interlocking records. 4. Supplies will need to be kept under lock and key when not under the eye of responsible employees. 5. Separation will be maintained between the activities of recording the collection and disbursement of cash on the one hand and those of reporting on income producing activities and the authorization of payments. 6. Periodical inventories will be taken that can be traced back into cash transactions. 7. Set up internal audit procedures for employees and provide for re-audit of the results by dependable and skilled representatives of management.

This outline obviously is not a complete indication of the relation between modern management and modern accounting. No mention is made above of independent professional accountants. This was premeditated because the period selected to reveal the old ideas is clearly different from the present in this respect. Another notable difference lies in the fact that the factory system and mass production had not yet appeared. Important as the differences are, they nevertheless are overshadowed by many similarities in spite of the intervening four centuries. If the above outline of management planning and control is reasonably indicative of present practice, we are in a position to look for some details about these similarities.

You may be surprised to find the essence of so many modern practices reflected in the activities of so long ago. The elapsed four hundred years would take our thought back to a period centering about 1553. The time would be close to the voyages of Columbus.

The notes which follow about early practices trace back to a bibliography consisting in large part of household account books and estate management instructions preserved from use in sixteenth century England. The records, with some overlapping and empty periods, extend from 1462 to 1640. These old records and much other material were examined more than thirty years ago by Paul V. B. Jones, now professsor emeritus of history at the

University of Illinois. His analysis was published in 1917 by the University under the title, The Household of a Tudor Nobleman.[1]

I have selected some items from this fascinating account in order to give point to the thought that many of the nobility of that time were good businessmen although they did not operate commercial enterprises. They were forced by circumstances to become good administrators. In maintaining their way of life, they had to make a business out of managing productively their large land holdings and controlling effectively the activities of possibly two hundred employees. Since most nobles of that time had important responsibilities associated with the activities of King and Court, they had to build an organization at home that could operate dependably in their absence. To establish and control an active organization even through trusted officers, calls for an amount of good managerial judgment that it not often revealed to us in our usual sources of knowledge of the people of this era—the books we read, the plays we see.

Note first the chief officers of a typical sixteenth century landed estate. Below the Earl or Duke who owned the estate under the King, were the following. The Receiver-General (a man we probably would call treasurer) collected the land rents, paid cash to other household officers on the Duke's warrant, and kept a record of his receipts and payments. Note that his payments were covered by written authorization and that his collections were made verifiable by the work and records of another officer, the Surveyor. The latter had the duties of judging the character and usefulness of all sections of the nobleman's land, of reporting to the Duke on current and prospective employment of the lands, and of preparing a book of rentals and others incomes.

[1] Studies in the Social Sciences Vol. VI, No. 4.

Just below these officers were Steward, Comptroller, Auditor. The Steward paid the wages and fees as directed, using funds supplied by the Receiver-General. The Comptroller might today be called inspector or perhaps supervisor of internal control. As to the Auditor, he was described in an old record in these words: "He is to bee judge betwixte the lords and his accomptants, and to deale trulie for and betweene all parties, and upon the determination of his audite, to presente to his lorde by booke or breviate, all his receipts, expenses, imprests, whatsoever, with the remaines of money, if any be. . . ." (from p. 143 regarding accounts audited by Thomas Clay in 1612). More about the auditor later.

These officers were not clerks but executives with clerks to assist them. Frequently they were knights and some were Earls' sons who were in training for managerial responsibilities on their home estate. Many employees with smaller responsibilities, as we shall see, also had clerical assistants. The officers were expected to guard against extravagance and to exercise careful control over supplies. These duties involved a daily tour of inspection into each department—at unannounced hours, let it be noted—and they were to report to the Duke both "misdemeanors" and "zealous painstaking."

Several modern business practices are clearly foreshadowed in this type of organization. There was a carefully selected and experienced group of executives working under a single leader who was himself active in the affairs at hand. Plainly visible is a logical separation of the duty and the responsibilities of each executive; yet the duties of all dovetail and the responsibilities of all are interrelated. Persons charged with responsibilities kept detailed records of pertinent facts and actions. The records were audited by a third party who, even four hundred years ago, stood

without bias between two parties at interest "to deale trulie for and betweene all parties."

To me the fascinating part of history is found in such spots as these which show us that some of the present is not so new after all; and in those parts which help us to see that the old is not merely reproduced generation after generation. Thus we come to realize that the practices of today are not good or bad because they are old. Then as now, the actions taken in business and accounting were taken because they were judged in their particular setting to be useful and adequate. If judged no longer useful they will be dropped; if no longer adequate, they must be modified. We may well be proud of the present, provided we can know that we are improving when change is made.

We should now look at the lower echelons of the old manor house organization. Most of the names of the work places are self-explanatory and easily converted into the title of the respective workers. Stable, woodyard, granery, butchery, these terms tell of a rural setting, of fields and animals and forest. Here are some others. Armory, wardrobe, larder, bakehouse, brewhouse, kitchen—these are divisions within the manor house itself.

More puzzling terms are those of "buttery," "ewery," "catery." The butler in the buttery was not in charge of butter but beer. The ewerer had the care of towels and basins used at table for washing the hands before and after meals—this being before the day of forks. In addition, the ewerer was responsible for a valuable inventory of pewter and silver plate. The cator (caterer?) was expected to provide and care for the supply of fresh vegetables, dressed poultry, eggs, fish, etc.

These locations were not only work areas (production centers?) but recording centers as well. All provisions brought in, all that were used, and the amounts left at the end of each day, week and year became a matter of record. Would we not call this "perpetual inventory?"

The following is part of an instruction for clerks of the kitchen. "Affore they maik any barganne for provisions (they) shall maik my Loorde privvy thereto. . . . to the entent that they may know whether his Lordship will agre to the said prices or not. . . ." Each day's use of provisions was on specific order, and the instruction book tells us ". . . none dared under penalty to issue another thing from his stock but by special command." Except during hours of service the supplies were always under lock and key; all "keis" were brought to the counting house after each meal. If any servant's stock issue passed beyond normal he was called to task. Another quotation tells us all supplies "that are boght (must) be entered forthwith in the Journall Booke when their ar boght." Clerks of the kitchen made a constant round of inspection of operations and records. This was to see "that the service that is appointed in the Booke of Direcions . . . be observed and kept without abridgement."

These old practices clearly have modern equivalents. Our work specialization in production centers has progressed far indeed, but only in extension of a principle. Work in progress is still inspected and checked against production standards, but not always against a "Booke of Direcions" as in the sixteenth century. Control today is exercised by a flow of work orders and other directives rather than by a manual of instructions. Perpetual inventories are now commonplace; valuable tools and materials are as carefully safeguarded as ever, although the "keis" will not be delivered into our equivalent of the "counting house."

Perhaps some day historians will bring together in sequence the story of the many stages through which business methodology has passed. It would be fascinating

reading, and no doubt would indicate that progress comes less from inspired inventions than bit by bit out of adaptations and improvements.

The remaining topic for these notes touches more closely upon accounting as such. The counting house, as already indicated, was a department in its own right. But lest accountants sigh for the good old days, let me point out that bookkeeping operations began at 7 a.m. and continued to 8:30 p.m.

Today we regard internal check very highly. So did these men of affairs four hundred years ago. It was not unusual for independently kept records to be matched as a test or proof. For example, the gentlemen ushers supervising meal service in the great hall made records of the food used at each meal. These facts could then be compared with issue records kept in the kitchen and other departments. And the issue records could be matched at any time against the same person's record of incoming provisions and unused inventory. Moreover, the records of baker and pantler were expected to agree as to bread delivered and used. Brewer and butler cross-checked as to beer; the slaughterman was checked against the larderer (as to meat), against the glover (as to hides) and the "chaundler" as to tallow for candles. Furthermore, the baker, the larderer, the brewer must produce a predetermined amount of bread, meat and beer out of a stated amount of materials received. Surely this tells of both internal check and production standards.

Faced with managerial craftsmanship such as this, we will not be surprised to see them use budgeting also. We are told it was customary to estimate a year in advance the need for food, cloth, fuel and other commodities. The Duke and his council approximated the price of all supplies and scheduled the times at which stated amounts of money should be transferred to designated household officials. As if this planning (budgeting) was not enough, the Duke and council determined the menus of all meals for the next year, with specified extra dishes for the feast days. These decisions no doubt were the basis for supervisors in the kitchen to calculate daily requirements in provisions issue.

Along with forward budgeting and close control over planned operations, frequent inventories enabled management to observe the extent to which procurement and issue were kept faithful to the budget. Clerks of the kitchen, spicery, granery, etc. made monthly summaries and inventories for their departments under the eyes of the comptroller's clerks. The counting-house clerks assembled these reports into a total of household expenses and a "Bill of Remainder," the latter being described as "the Remaineth of such Stuf as remains unspent provided and bought in the year aforesaid."

The arrangement of monetary data in statement form prior to audit showed a simple, if detailed, contrasting of receipts and disbursements. First the rents collected from tenants, then receipts from sale of wood, hay, etc. Following these the expenses were reported, the details being grouped in subsections. Under each group of details and for the totals and balance, the auditor indicated his verification by writing "Ex per T.C. auditor" (examined by Thomas Clay, auditor). Part of the year-end procedure was called "declaration of audit" and was carried out in the presence of the Duke, the Receiver, the Surveyor, the Auditor and other members of the domestic council. In attendance were representatives from each department, for example, "the Yoman of the Beddes that staunds charged with my Lord his wardrobe Stuf." Each was presumably present to answer questions and perhaps orally to substantiate the facts of his department from personal knowledge.

It is not unlikely that this assembly was instituted to enable the council to study the cash transactions, serving reports and remaining stock of supplies, in relation to the budget and "Booke of Direcions" provided to guide operations. The scheme of internal check and departmental records led naturally to an inventory report as proof of compliance. And the cash warrants for money transferred to officers, tied the cash reporting to physical facts reflected in the inventory, the latter being that part of authorized disbursements not yet consumed. The whole of the data there assembled not only served for review purposes but also provided the basic information for the Duke and council to use in making estimates for the next year, thus to start the operating cycle once more.

Accountants of today are familiar with the "charge and discharge" form of statement since this is often used now in reporting to the courts on the management of a trusteed estate. It is therefore not difficult mentally to project backward such a scheme of reporting and catch a glimpse of the same kind of reporting four centuries ago.

The kind of recording, of control and audit here described antedated English knowledge of Italian double entry records, although this had been in use in Italy for some time. Even after an English textbook made double entry available (1553) it seems to have been put in use but slowly during the next one hundred years.

Management of the household of the typical Tudor nobleman therefore was skillfully conducted without benefit of the antecedent of modern bookkeeping. In some respects however the English method was superior to the Italian. In the latter there was at that early day very little of financial statement arrangement, of internal check, or independent audit. After Italian methods were adopted in England came the wedding of English managerial accounting and Italian business accounting. The issue from that union we call "modern accounting" and include in that term not only accounting for mercantile business but for estates, governmental divisions, manufacturing corporations, and other organizations as well.

We may justly take pride in our intricate techniques and the professional status of our independent auditors. Yet we can well afford now and then to acknowledge a large intellectual debt to generation after generation of unknown contributors to our art. Perhaps it is not inappropriate to add that future generations will be able to thank the men of today for striving in their turn to make accounting ever more dependable and increasingly of service to management as well as to investors. Improvements from the past fifty years plainly indicate continuing development. What reason could we find for believing that accounting development is now complete?

PLANNING FOR RESEARCH*

THORNTON F. BRADSHAW
Principal, Cresap, McCormick, and Paget

I WANT to talk to you about a revolution that is now taking place in management and what that revolution means to research. I want to discuss with you what this new way of managing means to business management, why research to support this new management process is so badly needed and why such research is not forthcoming. Finally, I want to offer for your consideration a program of research action to help fill this need.

I welcome this opportunity to talk about this particular problem in management research for a number of reasons. First, as a colleague of your president, I came into close contact with a University research department—the Research Division of the Harvard Business School—and I was at least exposed to the problems of planning research. Second, as research director of the Controllership Foundation I came to know some of the leading architects of this management revolution which I shall describe. Many of these men are well known to you—Wayne Marks of General Foods, Bob MacNamara of the Ford Company, Allen Ottman of American Hard Rubber, Jack Van Pelt of the Kendall Company, Keith Powlison of Armstrong Cork, R. C. Lewis of R.C.A., Harold Scaff of Ebasco. I am sure these men do not picture themselves as revolutionaries, but such they are.

As research director of the Controllership Foundation, I joined the struggle to build a research program to support this new concept of management. I gladly took part in the inevitable tug of war which followed. Some of the lessons of this campaign I shall discuss with you later.

Finally, in my present work as a consultant, I have first hand contacts with many companies whose managements are struggling toward a new way of managing. I see these managements reaching out for the kind of help that only research can provide.

So you see, I have a deep and continuing interest in this management revolution and the part that research can play.

WHAT IS THIS NEW WAY OF MANAGING

Consider this situation which occurred recently.

A large steel company had an opportunity to buy a small by-product coke plant from a coke supplier at an attractive price. Management was interested in the opportunity from the standpoint of obtaining a continuous coke supply at reasonable cost during periods of high operations.

The controller's department was given the task of evaluating the investment and recommending action. The main outlines of the problem were sketched out in a half hour meeting of the top executives involved. The controllers' analytical group enlisted the aid of other departments and examined three areas of the problem.

1. With the production engineers, they examined costs and productivity and found that the purchase was a good one. The cost of producing coke in the plant in question was estimated at $20 a ton compared to $25 a ton the company was paying for purchased coke. The cost data were developed after a very close audit and analysis of costs in the coke plant, a study of the organizational structure, crewsize,

* This paper was presented at the Annual Meeting of the American Accounting Association, Chapel Hill, September 1, 1953.

production rate, yields and so forth.

2. With the industrial relations people, they found that the labor relations aspect of the problem contained potential difficulties. On unskilled wage rates, shift differentials, overtime provisions, and so forth, the coke company's contract was more liberal than the steel company's. These contract differences led the controllers' analysts to the conclusion that the purchase might bring on labor contract troubles.

3. With the help of the sales department, they found out that two of the steel company's major customers had contracts for 40 per cent of the output of the coke plants. Other companies had contracts for an additional 35 per cent of the output. The conclusion was that the purchase of the coke plant would put the steel company in the business of selling coke to a greater extent than it would alleviate the raw material shortage. The controllers' analysts recommended to the president—do not buy.

Something new has been added to management. Here we have the Controller's staff acting not as accountants, but in a far different capacity. What is this new function?

I think the essence of this new way of managing is the realization that there is a management function separate and distinct from that of selling, manufacturing or accounting. This is the function of planning for company objectives and controlling actions to achieve the planned objectives.

This seems an entirely reasonable kind of a function—scarcely revolutionary. There is a large need, as I shall describe later, for such a function. But in actual practice, few companies have recognized the need and still fewer have done anything about it. And those companies which have taken action have done so with considerable difficulty and grinding of gears. There are, I think two reasons for this slow and spotty acceptance of the necessity for this new function in business: first, industry has made no provision for this job in its various concepts of organization; second, neither schools nor business have given much attention to training men for such a function.

You may at this point feel that I have merely described the job of president and you may argue that there has always been a place on the organization chart for the president.

It is true that I have described the job of president, but several things have happened in recent management history which have so extended, so enlarged the job of president that one man cannot possibly fill the job. These changes are the reasons why a management revolution is now taking place. New ways of managing do not arise because a management theorist writes a book; they arise because the facts of life of business change, and in order to survive, management changes with them. What are some of these changes in the facts of business life which have occurred recently.

WHY A NEW WAY OF MANAGING

I think the major changes have been two: first, the decline of the validity of profits as a standard for making decisions within the corporation and second, the disappearance of the businessman and his replacement by the executive. Both of these changes have been caused by the increasing size and complexity of business units.

My last assignment at the Harvard Business School was to develop and teach a course in small business. I found myself in a new world and it was sometime before I realized why. It was a world in which almost every decision was made in the light of profit and was quickly appraised by an inexorable test of profit. Why is this so dif-

ferent from my observation in large business?

Does this mean that large businesses are not involved in the pursuit of profits? In spite of our recent preoccupation with objectives by far the most important social obligation of business is to make a profit. Only when management makes a profit can it turn its hand to social benefits. When management does not make a profit a large social disservice is done. This is the hard core of our way of life.

The making of a profit then is still the objective of each business, large or small. Who in the large corporation is motivated in his decisions by profit of the company? This is perhaps the crucial question. It does not matter if each member of management has sworn allegiance to the profit motive; are his day-to-day decisions motivated, sparked, tested and appraised by the yardstick of maximum long-run profits for the company? In many cases the answer to this question must be no.

The second change is merely the other side of the coin of the first change. If the standard of profit has disappeared, so has the businessman who made his decisions on the basis of profit expectancy. In his stead we have the executive,—the sales manager, the production manager, the accountant, the research director. Each is busily engaged in making decisions on the basis of standards and objectives of the world in which he lives—the selling, producing or research worlds.

What are some of the objectives or standards by which executives make decisions.

The Sales Manager

His objective may be ever-increasing volume of sales. Perhaps he has a pet line of products; they must be pushed at all costs. Perhaps he envies his friends who are sales managers of companies with national distributions; his objective then is to blanket the country with his products. Perhaps he feels he does not have a large enough sales force; his objective may be to by-pass independent distributors and enlarge his own selling force.

Attaining these objectives may or may not result in profits for the Company.

The Production Manager

Trained in engineering he may have a love for fine tolerances and may machine each part to the full capability of the tool. He may believe that a 5 per cent scrap loss reflects more credit on him as a manager than does a 15 per cent scrap loss. He may aim at a clean, overmaintained plant. To avoid production delays he may aim at overstocked material bins or standby machines.

Attaining these objectives may or may not result in profits for the Company.

The Accountant

His standard may be the number of errors which are found in his reports. Perhaps he is motivated by a desire to close on the seventh day of the month following rather the ninth. Perhaps he aims at mechanizing all accounting. If he is responsible for credit perhaps his objective is the lowest possible credit loss.

Attaining these objectives may or may not result in profits for the Company.

It seems clear that while the Company itself is judged by profits, individual decisions may or may not add to profits. Each member of the management group is motivated by the surroundings of the world he lives in—the selling, production, or accounting world. These worlds supply their own standards. Decisions taken in accordance with these varied standards in many instances not only do not add to profits but effectively insure that a profit will not be made. Management left on its own is unbalanced management.

HOW MANAGEMENTS HAVE MET THESE CHANGES

Up to this point, I have described the back drop of the revolution—the basic changes in the facts of life which have required managements to change the way in which they manage business enterprises. How have managements met these changes?

Managements have reacted to these changes in two ways: first, some managements have recognized the necessity of creating an over-all system of artificial standards which will insure the attainment of company objectives; second some managements have recognized that creating these artificial standards and welding them into the main flow of the business requires an extension of the job of president. In brief, these changes have called forth a new function in business—that of management planning and control.

Management Planning and Control consists of these steps: first, setting a profit goal; second, setting departmental goals which when taken together will achieve the profit goal; third, measuring progress against those standards; and fourth, making continuous adjustments to keep the whole organization moving in balance toward the goal.

For many years accountants, industrial engineers, statisticains and other staff people have been developing the tools of planning and control—cost accounting, budgetary control, trend analysis, management development programs, inventory control, quality control, and so forth. The missing ingredients have been two: first, a realization that all these tools must be so geared in together that they form a unified pattern of plans and controls designed to achieve a profit goal; and second, that the development and maintenance of such a pattern requires the full attention of a group within management. The concept of management planning and control supplies these two missing ingredients.

HOW COMPANIES HAVE ORGANIZED FOR MANAGEMENT PLANNING AND CONTROL

A number of companies have recognized that management planning and control is a separate function and have accordingly made a place for it in their concept of organization.

Some companies have reorganized top management to make a place for planning and control. In both Du Pont and General Electric top management is considered a distinct function which is concerned with planning, organizing, measuring and integrating, in contrast to the functions of research and engineering, manufacturing, marketing, finance and accounting, employee and public relations and corporate law.

Du Pont has relieved its top executives of all line operating responsibility. The president and eight vice presidents form the membership of an executive committee. General Managers in charge of the nine industrial divisions report to the Executive Committee. The Treasurer's department performs the analytical work necessary to keep the Executive Committee on top of its job. The Du Pont approach is an outstandingly successful attempt to provide for the separate and distinct function of management planning and control.

General Electric has organized what it calls the executive office to perform planning, organizing, measuring and integrating work. This office is composed of the President, The Chairman of the Board, Group executives, and staff officers. In this way, General Electric has decentralized the position of president without relieving him of ultimate authority and accountability.

In General Motors, the management planning and control responsibility is vested in two committees—the Financial and the Operations Policy committees.

These two committees establish over-all goals for production in order to maintain logical relationships to sales, inventories

and purchase commitments and return an investment. Performance standards are set for each division. Each division must fit into the general plan and operate according to the dictates of four basic economic factors—long term growth, business cycle variations, seasonal fluctuations and competition.

Some companies have established control groups which report directly to the president. The Koppers Company is a well known proponent of the Control Section form of organization.

The Control Section coordinates the development of plans by drawing together the forecasts and plans of each operating unit and staff agency. In cooperation with the finance group it analyzes these plans in terms of the need for and availability of working capital, and develops plans to obtain necessary funds.

Some companies have drawn upon the financial executive to provide this planning and control function. Most financial executives who have accepted this responsibility have separated the function of figure gathering from that of figure analysis within their own departments. An outstanding example is the U.S. Steel Corporation. Throughout U.S. Steel, the controllers are responsible for both figure-gathering and figure analysis. Each controller, however, is assisted by an analytical group called the Cost and Statistics Division.

This division is charged with a three-fold responsibility:

1. To point out to management where problems exist.

2. To advise management on the effectiveness of their plans.

3. To aid management in decisions by assisting in the evaluation of alternative courses of action.

There are stirrings in other companies. In American Enka, planning and control functions have been assigned to an Administrative Engineering Department which reports directly to the president. In American Telephone and Telegraph Co. and in Monsanto Chemical, an administrative planning staff has been created. In Merke and Co., the Treasurer has assumed planning and control responsibility, in the Ford Motor Company, the Controller. Other Companies have taken first tentative steps—Alleghany Ludlum, Armstrong Cork, Atlantic Refining, Chesapeake and Ohio Railroad, Gates Rubber, Heinz, Inland Steel, Jones and Laughlin, Metropolitan Life, Minneapolis Honeywell, Mutual Life, Plymouth Cardage, Prudential, Standard Oil of New Jersey, United Air Lines. This in only a partial roll call.

Gentlemen, I have taken a good deal of your time to describe this change in management which I consider drastic enough to call a revolution. Basically, it consists of the realization that general management—the planning, coordinating, controlling function—is a function separate and distinct from those of selling, manufacturing and accounting. It consists of the realization that the many control tools which have been developed in past years must be build into a single machine whose purpose is the turning out of profit according to predetermined plans. It consists of the realization that this planning and control function in today's large business has vastly outgrown the capacity of a single man. And finally it consists of the realization that management must organize for this new function.

I have taken your time because I believe this development in management offers a great challenge to those engaged in management research, a challenge which has not been met even in the slightest degree. To be sure there are many talks such as this one—talks which skip blithely from one generalization to another. But when one reaches for guidance in terms of where are we going and how can we best get there, the kind of guidance that only research can provide, it simply isn't there.

WHY SO LITTLE RESEARCH IN MANAGEMENT PLANNING AND CONTROL

Why has there been so little research done in this field? I think the reason is that research organizations themselves are compartmentalized. That is, a research organization is devoted either to servicing a single function in business, or else it is devoted to general management research; in the latter case it is usually organized within itself to service the separate functions of a business. Just as management planning and control is nobody's business in a company, so research for management planning and control is nobody's business in a research organization.

The National Association of Cost Accountants and the American Institute of Accountants are examples of the former type of research organization. Both do splendid work in servicing their constituents—cost accountants and public accountants. But both are playing a game in which the objectives, the players, the field are all clearly defined. Even if these organizations could do so, they would probably do their membership a large disservice, if they suddenly threw away the rule book and developed an entirely new game.

The American Management Association and the National Industrial Conference Board are examples of the latter type of research organization. The efforts of both are ostensibly aimed at general management research. But the internal organization of each is set up so as to mirror business organization—that is, each has a Finance Division whose task it is to service the finance function of business, each has a marketing division whose task it is to service the marketing function in business, and so forth. I do not mean that these organizations have provided no help in the planning and control field. The American Management Association in particular, through its seminars, has done exceptional work in spreading information about planning and control. But seminars are not a substitute for research.

The Controllership Foundation, the research arm of the Controllers Institute, is in a class by itself. The job of the Controller is probably not the same in any two companies, and in most companies it is rapidly changing. For this reason the research program of this Foundation is not limited to servicing a well-defined function. Furthermore, as I have pointed out previously many controllers have assumed responsibility for management planning and control. Thus, we might expect the Controllership Foundation to assume leadership in this field of research for the planning and control functions.

But the Controllership Foundation suffers from two serious defects. First, it is a membership organization and as such it must service all its members—those who are primarily cost accountants, tax experts, financial accountants, and those who have assumed the plannning and control function. It is probably impossible under such circumstances to develop a unified research policy dedicated to exploring this new concept of management. A second defect is that the Controllership Foundation operates without a research staff and hence must farm out its research with a resultant loss of control.

In my own thinking, there is little hope of obtaining hard core research in management planning and control either from the specialized research organizations, the general management research organizations, or even an undefined, embryonic organization such as the Controllership Foundation.

THE PLACE OF THE UNIVERSITIES

Where can we look for help? I submit to you gentlemen the Universities must be our source of supply both because they are best prepared and because they have a large interest in participating in the

development of a new management concept.

Why are universities best prepared to assume this research task? First, they can draw upon existing research organizations; second, they can provide research teams made up of men trained in research in each of the various functions of business. Third, they do not serve any single function in management—they do not serve a constituency; finally, and most important, they are committed to basic research and not to answering managements' immediate and transitory needs.

Why do Universities have a large stake in the development of this new concept of management?

First, because a strong economy depends upon strong management. We have in this country confounded the gloomy 19th Century economists by creating a system of responsible capitalism. The ability of management to manage has played a large part in the development of an almost classless society with an incredible standard of living. Here is an opportunity to help management meet new conditions, an opportunity to help business become somewhat less of an art, somewhat more of a science.

Second, because here is an opportunity to anticipate the growth of a new function in management, to develop courses to support this function, and to develop men capable of assuming leadership in management planning and control.

A number of years ago, Doctor Alexis Carrel wrote a controversial book in which he pointed out that science had become so compartmentalized that men in one field could not understand men in another field. He felt that large advances in science would result from the integration of all the separate fields of science into one. As a solution he advocated the planned development of men with an understanding of all the scientific disciplines.

Perhaps the really significant advances in management will have to wait on the development of men with an understanding of the relationship of all parts of the business and the objectives of the whole business. The University's place in the development of such use is of course paramount.

I therefore strongly urge that the research departments of the Universities represented here explore this concept of planning and control, that they prepare specific plans for research, and that they approach the top managements of our leading industrial companies for financial support.

Such a partnership can in my opinion lay a firm foundation for what promises to be the most significant change in business management in our time.

THE PRICE LEVEL RESEARCH PROJECT*

WILLARD J. GRAHAM
Professor, University of North Carolina

MY FUNCTION on this program is to state, very briefly, the background for the Price Level Research Project. Mr. Jones and Mr. Lindsey will discuss the project.

If I were speaking to another audience I might think it necessary to explain the problem of changing price levels, but you have been exposed to so many "explanations" of the problem—and so many and so diverse solutions to it—that I feel safe in omitting any such explanation. Anyway, the Committee on Accounting Concepts and Standards, in 1951, issued a very excellent statement of the problem and suggested one approach to its solution. I asume that all of you have read this statement and the other statements issued by this Committee. If you have not, then the Association should reconsider carefully the annual expenditure of $1,000 to $1,500 to finance the activities of the Committee, and its members should question the wisdom of expending some $10,000 worth of personal and family and social time in attending the Committee meetings and in report writing and correspondence between meetings.

In its statement[1] the Committee poses three questions:

I. Is modification of the conventional accounting approach to net income determination to give explicit recognition to changes in the value of the dollar a desirable development?

II. If so, what methods are most appropriate for measuring variations in the value of the dollar and for giving effects to such variations in financial reports?

III. If such modification is desirable, how is disclosure best to be accomplished?

These questions and their answers are vital to all persons who prepare or read financial statements, to all persons who make decisions on the basis of accounting information, and to all persons affected by these decisions. Who else is there?

Various answers to these questions have been suggested—by individuals and by organized groups. There is not time to review them all. For example, at the Sixth International Congress of Accountants in London, in June of last year, eight papers were presented on this subject—and an extended discussion. Some of the opinions, conclusions, proposals and suggestions are quoted here:

C. PERCY BARROWCLIFF, F.S.A.A.
SOCIETY OF INCORPORATED ACCOUNTANTS AND AUDITORS
ENGLAND

"In the measurement of profit, depreciation of fixed assets should be based on the current replacement cost and not on the original or historical cost. The practical application of this principle is not insuperably difficult.

In the measurement of profit, the same type of principle should apply to inventories. I concede, however, that at this time inventory profits have largely been absorbed in published reports of profits. We are now in the situation when there is a possibility of a fall in the price level. This would certainly have unfortunate repercussions if a change had to be made in the treatment of inventories. It may be that when a stabilized price level has been

* Presented at the annual meeting of the American Accounting Association, Chapel Hill, September 1, 1953.

[1] "Price Level Changes and Financial Statements." Supplementary Statement No. 2—Committee on Accounting Concepts and Standards—American Accounting Association. ACCOUNTING REVIEW, October, 1951.

reached, the principle should be adopted.

The balance sheet should be treated as a document reporting on the stewardship of contributed money capital, capital gains and savings. Therefore, I am in favor of following the existing convention of adherence to original costs in statement of the balance sheet."

A. GOUDEKET NEDERLANDS INSTITUUT VAN ACCOUNTANTS

"It has been established that the replacement value is an essential element in the calculation of profits and in the computation of capital employed. The inflationary trends in the last few decades have given practical emphasis to the theory of replacement value.

The results of the application of the replacement value theory must be brought into the books of the business. The books and accounts provide information for management and all others interested in the affairs of the business, and therefore the financial statements must show the nominal increase of capital distinguished between profits and differences in value.

Accounting technique has progressed to such a degree that rational methods are available, both for the recording of mass data and for the fundamental solution of the problem."

PROFESSOR DR. KARL HAX, DR. ERNST KNORR AND DR. ALBERT MEIER INSTITUT DER WIRTSCHAFT-SPRUFER, GERMANY

"We purposely do not speak of price fluctuations, but of alterations in the money value, because we are concerned not only with short-term price fluctuations, but with the primary problem of defining long-term development, i.e. the trend of price level. *Fluctuation* of prices which solely alters the price relations (fluctuation in real value) belong in our opinion to normal market conditions; to meet and to utilize those fluctuations is a matter for the undertaking concerned. In theory, completely separate treatment is necessary for *permanent* alteration of price levels which have their origin not in a shifting of price relations, but in an alteration of money value. In practice, however, it is seldom possible to separate the influence of fluctuations in real value from the influence of alterations in money value. As a rule, it must suffice to express both influences in one single figure. It should, however, be remembered that this is a figure of complex value which reflects both alteration in money value and fluctuation in real value.

The German law relating to balances (not only commercial law, but also the law relating to taxation) starts with the nominal capital account. Profit is understood as being everything exceeding the original capital shown in money figures. Consequently the profit or loss shown in the balance sheet contains the realizable alterations in money value. These, however, are not to be considered as real profits or losses, since they have neither augmented nor reduced the quantity of the capital substance. We call them sham profits or sham losses. What consequences follow in drawing up the balance sheet?

Profits derived from alterations in money value (i.e. sham profits) should not be drawn out or distributed amongst the proprietors. Such profits should not be subjected to income-tax. Withdrawal or taxation both prevent the undertaking from replacing plant and re-stocking raw materials out of sales profit. A loss of substance with subsequent shrinking of business will be unavoidable if the undertaking cannot recover what it has lost through taxation and withdrawals by the issue of new capital. If new capital is not available (perhaps because of high taxation) liquidation is the unavoidable result of gradual exhaustion."

T. A. HILEY, F.C.A. (AUST.)
INSTITUTE OF CHARTERED ACCOUNTANTS IN AUSTRALIA

"Permanent fluctuations in the price level can attain a degree where they can no longer be ignored by the profession.

The permanent fluctuations should largely be those reflecting changes in the general purchasing power of currencies but the effect of the unearned increment should also be considered.

Fluctuations of a temporary character, and particularly those reflecting the movements of a free commodity market, should be ignored.

Consideration should be refused during a period of continuing movement and should be limited to a period of restored stability.

Any device yet proposed for adjusting the basis of annual accounting is unworthy of general adoption.

The pronouncements of the accountancy institutes of England and Wales, the United States of America and Australia content themselves with the observation that recorded profits, during a period of rising prices, contain an element of living on capital; and counsel those charged with the administration of commerce to avoid too great a current distribution and to arrange the addition to reserves of a greater portion of current earnings.

These advices have been widely followed in Australia. Generally, they have failed to meet the entire need for expansion in the circulating capital, let alone provide for general extension of the enterprise. But they have, over the past ten yars, made a most material contribution towards limiting what otherwise must have been a colossal need for extra circulating capital.

When stability is restored there could be advantage in a complete revaluation of the assets of all enterprise, with the adoption of those revaluations.

To be effective, within each currency area, any such revaluation should be simultaneous and universal. The personally conducted business should be dealt with in exactly the same manner as the joint stock enterprise. I can think of nothing more confusing to both owner and shareholder, to the economist and the tax-gatherer, than to make a patchwork quilt of commercial accounting.

The revalued figures should be regarded as a modern yardstick of measurement and a new basis for depreciation charges and allowances, and should not be regarded as involving any capital profit for those countries which tax capital gains.

Tax-free stock dividends on the Australian pattern should be the vehicle for adjusting the interest of shareholders.

The position of fixed preferential shareholders and other special classes of shareholders calls for consideration. I can see no case for, nor means open to consider, even long-term debenture-holders, nor in any way to alter their fundamental position as fixed-sum creditors. It is probable that the preference shareholder, who has no right to participate in excess earnings or in a surplus during a winding-up, is similarly pegged to the strict money term of his contract. His is an ownership without the equities common to ownership.

The importance and rarity of such a general revaluation are such as to warrant statutory authority in each country. The statute should fix the date of the valuation, the manner of its application, and should adopt the new basis for depreciation allowances. It should provide for the problem likely to arise with the holders of preferences and other shares to which special rights are attached, the main purpose being to preserve equities between the different classes of shareholder.

Statutory authority should only be sought following a full inquiry in each country by the accountancy institutes,

such inquiry covering:

(a) The need for revaluation;
(b) Whether stability has been restored to currency values;
(c) The local problem likely to arise; and
(d) A fully detailed programme covering the accounting procedure to be followed in every class of undertaking."

P. LAUZEL, J. POLY AND A. CIBERT
CONSEIL SUPERIEUR DE LA COMPTABILITE (MINISTERE DES FINANCES ET DES AFFAIRES ECONOMIQUES) FRANCE

"In the presence of an inflation of such importance as that now existing in France, a general revaluation of balance sheets is probably desirable and possibly unavoidable. The use of the method specified by the Commission de Normalisation des Comptabilites would be a definite improvement on present practice.

The Commission de Normalisation des Comptabilites has made the following proposals:

(a) Compulsory general revaluation progressing by section in decreasing order of economic usefulness;
(b) Adoption of a method of valuing assets which shows their net actual worth, by subtracting from the replacement value an amount corresponding to wear, without bothering to revalue the depreciation actually carried out (see paragraph 14).

If price fluctuations intervened subsequently, adjustment accounts might be created on the liabilities side as long as the total of these accounts did not exceed a figure which would justify a new revaluation. But in any case, it may be admitted that a more practical and less logical conception of accounting leads to a concomitant use of two kinds of documents:

(a) Accounting statements following general rules fixed by requirements of a legal statistical and economic nature.
(b) Economic statements adapted to a permanent and rapid survey of management, depending particularly on current economic conditions.

With this in mind, it will be seen that great interest is given to the realization (recommended by certain authors) of an 'economic balance sheet' as distinguished from an 'accounting balance sheet.'"

EDWARD B. WILCOX, C.P.A., AMERICAN INSTITUTE OF ACCOUNTANTS

"The present position in the United States is that generally accepted accounting principles forbid the introduction of price level adjustments into the preparation of primary financial statements except in so far as the LIFO inventory method may be regarded as doing so. With respect to depreciation, the committee on accounting procedure of the American Institute of Accountants has taken the position that, for the time at least, increasing such charges is not a satisfactory solution to the problem. In this view it has had the support of the New York Stock Exchange, and apparently that of the Securities and Exchange Commission. These authoritative bodies clearly establish the present position.

For several years the literature of accounting in the United States has been crowded with comments, recommendations, and arguments on the subject, indicating a considerable disagreement as to what, if anthing, should be done. In the meantime several research projects and experimentations with various possible methods have been carried out, and others are under way. Since the problem is of unquestioned importance and is continuing to cause deep concern, these projects are of unquestionable value, whatever their outcome. It should be borne in mind, however, that the trouble lies in inflation itself, and that prevention of inflation would not only eliminate the accounting problems which result from it, but would also be of greater social usefulness than

any conceivable adjustment of accounts."

My own contribution to this occasion was based largely on Supplementary Statement No. 2 of the Committee on Accounting Concepts and Standards to which I referred earlier; and to which I shall return in a moment, with perhaps a single exception. I offered one suggestion in which not all of the Committee would concur.

"This does not mean, however, that no immediate progress is possible in the solution of this important problem. A substantial improvement in reported income data can be achieved *now*, by adjusting for the income statement only the two expense items most materially affected by price change—depreciation and cost of goods sold. In most situations these two adjustments alone will account for most of the difference between 'conventional' income based on historical cost and income completely adjusted to a common dollar basis. Net income, thus adjusted, can be important supplementary information for the purposes described earlier, in this paper. Granted that the adjustment is not complete, that it is only approximately correct (as are so many other items on financial statements) and that it is not 'at the present stage of accounting development' subject to verification by independent accountants, at least it will force upon the readers of the report a realization that there are two concepts of income—that they are, or may be, substantially different in amount, and that each is useful for specific purposes. Thus there can be begun immediately the educational programme essential for the long-range developments discussed earlier as ultimate goals—the all-inclusive adjustment of all items on both financial statements, to reflect completely the effect of price change upon the determination, reporting and interpretation of income and financial conditions."

Quotations in this area must include, of course, the conclusions of The Study Group on Business Income[2] (only five of thirty conclusions are quoted; they are most pertinent to this topic).

The first major issue for consideration of the Group is, then: What changes in practice are called for where the assumption of reasonable stability is regarded as unwarranted?

Upon this point it would seem that in the longer view methods could, and should, be developed whereby the framework of accounting would be expanded so that the results of activities, measured in units of equal purchasing power, and the effects of changes in value of the monetary unit would be reflected separately in an integrated presentation which would also produce statements of financial position more broadly meaningful than the orthodox balance sheet of today. It is believed that statements of business income in which revenues and charges against revenue would be stated in units of substantially the same purchasing power would be significant and useful for many of the purposes for which income determinations are commonly used, if not also in reports upon stewardship.

The problem of presenting both the most generally useful income determination and a fully significant statement of financial position would doubtless present difficulties, but probably none which the highly developed accounting techniques of today could not solve.

For the present, it may well be that the primary statements of income should continue to be made on bases now commonly accepted. But corporations whose ownership is widely distributed should be encouraged to furnish information that will facilitate the determination of income measured in units of approximately equal

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[2] "Changing Concepts of Business Income"—Report of Study Group on Business Income, The Macmillan Company (New York, 1952). Nos. 9–12 and 13.

purchasing power, and to provide such information whenever it is practicable to do so as part of the material upon which the independent accountant expresses his opinion.

A further conclusion is that there is need for further study of concepts of income in relation to accounting entities, the corporation, the group of corporations, the enterprise, the ultimate beneficiaries (stockholders, and so forth). There is today no agreement on such questions as to what *changes* in these entities should be deemed to call for the adoption of new "bases of accountability." Questions of this type should be considered not only by accountants, practicing and academic, but in conjunction with lawyers, economists, and others."

Now let us return to Supplementary Statement No. 2 of the Committee on Concepts and Standards of this Association, for the suggestions presented in this statement constitute the basic principles underlying the research project to be discussed by the principal speaker on this topic.

Let us repeat in order the three questions posed by the Committee together with the suggested solution. And from here on I am quoting directly from the Committee Statement.

The first question:

I. Is modification of the conventional accounting approach to net income determination to give explicit recognition to changes in the value of the dollar a desirable development?

The Committee's answer:

(1) In periodic reports to stockholders, the primary financial statements, prepared by management and verified by an independent accountant, should, at the present stage of accounting development, continue to reflect historical dollar costs.

(2) There is reason for believing that knowledge of the effects of the changing value of the dollar upon financial position and operating results may be useful information, if a practical and substantially uniform method of measurement and disclosure can be developed.

(3) The accounting effects of the changing value of the dollar should be made the subject of intensive research and experimentation; the specific significance of the basic problem should be determined with as much accuracy as possible; the means of its solution, if its significance warrants, should be thoroughly investigated.

The second question:

II. If so, what methods are most appropriate for measuring variations in the value of the dollar and for giving effect to such variations in financial reports?

The Committee's answer:

(1) The effects of price fluctuations upon financial reports should be measured in terms of the over-all purchasing power of the dollar—that is, changes in the general price level as measured by a *general* price index. For this purpose, adjustments should not be based on either the current value or the replacement costs of specific types of capital consumed.

(2) The measurement of price level changes should be all-inclusive; all statement items affected should be adjusted in a consistent manner.

It is necessary here, I think, to quote an explanatory, but not qualifying, footnote:

The Committee is not unaware of the importance of replacement costs for many purposes, nor is it insensitive to the fact that comparisons of current revenues with the costs of replacing the capital "consumed" in producing such revenues may be highly significant. Financial management necessarily involves the planning of *future* capital receipts and disbursements; and no valid objection can be raised to any form of explanation which enhances the comprehension of such problems on the part of stockholders and other interests external to corporate management.

The third question:

III. If such modification is desirable, how is disclosure best to be accomplished?

The Committee's answer:

(1) Management may properly include in periodic reports to stockholders comprehensive supplementary statements which present the effects of the fluctuation in the value of the dollar upon net income and upon financial position.

(a) Such supplementary statements should be internally consistent; the income statement and the balance sheet should both be adjusted by the same procedures, so that the figures in such complementary statements are coordinate and have the same relative significance.

(b) Such supplementary statements should be reconciled in detail with the primary statements reflecting unadjusted original dollar costs, and should be regarded as an extension or elaboration of the primary statements rather than as a departure thereform.

(c) Such supplementary statements should be accompanied by comments and explanations clearly setting forth the implications, uses, and limitations of the adjusted data.

Upon the basis of these conclusions the price level research project was initiated. We shall hear from the following speakers what has been accomplished.

PRELIMINARY ANNOUNCEMENT OF 1954 PROGRAM

Preliminary Announcement of 1954 Program
University of Illinois
Urbana, Illinois

Tuesday, August 31, 1954—Registration

—Committee Meetings

Wednesday, September 1, 1954

9:00–10:00 Registration

10:00–12:30 Session I

Presiding: Paul Grady, Price Waterhouse & Co.; Vice-President, American Accounting Association

Subject: Uses and Limitations of Price Level Data

Papers: Report on the Association's Research Study, Ralph C. Jones, Yale University and Perry Mason, University of California, Berkeley
Limitations to the Usefulness of Price Level Adjustments, James L. Dohr, Columbia University

12:30– 2:00 Luncheon and Short Business Session

Welcome by Paul M. Green, Dean, College of Commerce, University of Illinois

Report of the Secretary-Treasurer

Report of the Director of Research

Report of the Editor

Report on Activities of the Year

2:00– 4:30 Session II

Round Tables: 1. Questions and Problems of Price Level Adjustments
Chairmen: Ralph C. Jones, Yale University and Perry Mason, University of California, Berkeley

2. Teaching First Year Accounting

Chairmen: Ralph L. Boyd, Oregon State College, R. B. McCosh, University of Denver and William A. Terrill, University of North Carolina

3. Problems of Training for Industrial and Public Accounting

Chairmen: W. B. Jencks, Ohio State University and Leo A. Schmidt, University of Michigan

4. Concepts and Standards

Chairmen: Thomas M. Hill, Massachusetts Institute of Technology and Stewart Y. McMullen, Northwestern University

5. Cost Concepts and Standards

Chairmen: Norton M. Bedford, University of Illinois and B. C. Lemke, Michigan State College

6:30– 8:30 Session III

Banquet

Presiding: Frank P. Smith, University of Michigan; President, American Accounting Association

Presentation of Alpha Kappa Psi Award

Election of Officers

Thursday, September 2, 1954

9:30–12:00 Session IV

Presiding: Wayne E. Shroyer, University of Denver; Vice-President, American Accounting Association

Subject: Current Developments in Accounting

Papers: Direct Costing and the Use of Cost Data: Raymond P. Marple, Assistant Secretary, National Association of Cost Accountants

Statistical Techniques in Accounting and Auditing: Robert M. Trueblood, Touche, Niven, Bailey & Smart; William W. Cooper, Carnegie Institute of Technology

Stock Dividends and Management Problems: Phillip L. West, Vice-President, New York Stock Exchange.

12:30– 2:00 Luncheon

Presiding: Hiram T. Scovill, University of Illinois

Speaker: Arthur B. Foye, Haskins & Sells; President, American Institute of Accountants

2:00– 4:00 Session V

Subject: Training in Business

Presiding: Charles J. Gaa, University of Illinois; Vice-President, American Accounting Association

Papers: Appraisal of College Education for Business; Dean Richard L. Kozelka, School of Business, University of Minnesota

Work of the Commission on Standards of Education and Experience for Certified Public Accountants: Donald P. Perry, Lybrand, Ross Brothers & Montgomery; Chairman, Commission on Standards and L. J. Buchan, Washington University; Study Director, Commission on Standards

THE ACCOUNTING CURRICULUM

D. M. Beights

Accounting has long been one of the most popular courses offered in our colleges, and this in spite of the difficulty of the subject matter and the high percentage of failures among the students. With a proper course of study and with competent instructors, the study of accounting offers many real benefits to the serious and diligent student.

Some of the more obvious benefits may be outlined briefly. Accounting as a subject contains a great amount of factual information of value to students interested in general economic affairs and business practices. Then too, accounting is a scientific method of analysis and study of business activities. Accounting provides a valuable discipline and method of study requiring a careful and accurate analysis of business situations, neatness and precision in recording the effects of transactions, and logic and integrity in presenting and interpreting the results of financial activities. Accounting combines the mental discipline of mathematics and logic and at the same time offers a course rich in practical information.

Because of the factual content, the method of analysis and study, and the characteristic of being a "tool subject," accounting has a high "carry-over" value into other fields of study and activity, particularly in economics and business. Furthermore, accounting has a high vocational value, providing the necessary training for those who may enter business as accountants, internal auditors, in controllers' departments, or in other capacities, more or less closely related to the above. And finally, accounting in its highest development, is a profession requiring for its successful practice a very broad and at the same time a most difficult training. But for those having the aptitudes, capacities, and training, this work offers monetary and social rewards among the highest of any of the learned professions.

Because of the high inherent value and wide appeal, accounting courses attract students from all departments and colleges of the university. These students may be grouped roughly into three general classes. In group 1 are those students from the various departments and colleges, such as education, home economics, public administration, economics, and business administration, who elect accounting courses to supplement their major field of interest.

For this first group of students, courses should be planned and built around the problems of developing an appreciation and an understanding of the principles underlying current business practices and procedures, and the methods used by the accountant in analyzing and recording these activities. Since the beginning student in accounting is concerned with recording and reporting "business events," it follows that he first must become familiar with those events which are to be recorded. The emphasis should not be on mere bookkeeping routines, but rather on a thorough understanding of sound business practices, and proper recording and reporting. These courses should be complete units in themselves since about one-half of the students enrolled do not take other accounting work.

In group 2 are those students in the department or school of business who elect additional accounting courses in order to obtain some vocational training either directly or indirectly, or to complete their major field of concentration in the general field of economics or business administration. Courses should be planned covering

the principles and procedures which will likely be of the most value to these students who are studying the various divisions of business but who do not expect to become accountants. These courses should be designed to complement courses in marketing, insurance, finance, investments, business management, business education, and so on. Even though the student does not plan to become an accountant, experience has shown the desirability of having a sound and thorough working knowledge of the fundamentals of accounting in meeting many problems in general business management in its varied fields of specialization.

In group 3 are those students in the department or the school of business who elect accounting as their major field of study. They are primarily interested in the vocational and professional aspects of the subject, and expect to work as an accountant or in a closely related administrative position. For these students a sufficient number of courses should be planned and developed covering the advanced and technical subject matter in sufficient detail to enable the thorough student to become reasonably competent in the field of accountancy, after a minimum amount of practical experience.

Contrary to widely held opinions, the accounting curriculum and the accounting courses should be planned to serve the general business students equally as well as the accounting specialists, keeping in mind their special needs and desires. There need be no conflict in the interests of the approximately one-fourth of the accounting students who are to be specialists and the three-fourths who are not so interested. But it is only logical and reasonable to assume that particular attention should be given to those courses affecting the larger number of general students as well as those courses planned more specifically for the smaller number and more select students who are to enter the vocational and professional field of accountancy.

The results which may be expected on all levels of instruction are affected directly by three essential factors: the students, the instructors, and the plan of study. The students should be selected, when practicable, on the basis of their general intelligence, their interest in accounting, and their aptitude for accounting work in one or more of its several branches. The instructors, likewise, should be carefully selected on the basis of their general intelligence, their knowledge and understanding of the subject matter, both theoretical and practical, and their interest in and aptitude for teaching accounting. In general, the curriculum should be planned to cover the subject matter adequately and meet fully the vocational and professional needs of the students. The requirements of business and the profession, of course, are not to be overlooked.

The accounting curriculum, in covering the area of accounting subject matter, should be well balanced and the courses properly correlated. The curriculum should be divided into courses and course-groups, based upon subject matter and related problems. The more elementary as well as the more basic and widely used material should be presented in the elementary and early under-graduate courses. The material is thus made available to a greater number of students and benefits them most in their later study. The more difficult and complex material should be reserved for presentation in advanced courses where specialization is more likely to occur. Prerequisite course requirements should be determined after careful study, used sparingly, and followed strictly. Depth as well as breadth is necessary for proper training in accounting. The curriculum should remain "flexible" in the sense of permitting the addition of current and pertinent material in advanced courses

when desirable without disturbing the over-all plan of study. The curriculum should remain "flexible" in the sense of permitting students of various interests and aptitudes to select courses and special areas for study best suited to their individual needs. There should be a sufficient number of courses which will permit a degree of specialization in (1) cost accounting, (2) tax accounting, (3) governmental and institutional accounting, (4) private accounting, (5) public accounting, and (6) teaching, on both the high school and college levels.

The accounting curriculum presented below is divided into three parts. The first part constitutes the basic accounting work which may be offered by the smaller colleges where specialization is not possible or desirable, yet offering a "major" in accounting. The first and second part combined outlines the basic accounting work for a full major in accounting with a reasonable degree of specialization and emphasis on the vocational and professional aspects of accountancy. The three parts combined outline the areas to be covered in a curriculum with the greatest degree of specialization with emphasis on the vocational and professional aspects of accountancy. This curriculum provides sufficient material leading to a graduate or a professional degree in accountancy.

The advantages which might come from reaching a general understanding of the subject matter to be included in the accounting curriculum and the division of that subject matter into the various courses and course-groups are many. To mention only a few, it should result in an improvement in the organization and presentation of material in our text books. With a better organization and presentation of subject matter, the quality of instruction in our colleges should improve greatly. The standards of instruction in our various colleges should be raised and a minimum standard more easily established and maintained. Standards of examining and testing should become more uniform and dependable within, and among the colleges. And finally, the professional examinations should become more dependable and accurate in determining who are competent to render a professional service and should be admitted to the profession, and those not so qualified.

The basic accounting curriculum (with suggested course titles and numbering) may be outlined as follows:

201. Principles of Accounting, 3 Hrs
202. Principles of Accounting (continued), 3 Hrs
301. Accounting for Assets, Incomes and Expenses, 3 Hrs
302. Accounting for Ownership: Creditorship and Proprietorship, 3 Hrs
303. The Accounting System and Internal Control, 3 Hrs
304. The Preparation and Analysis of Accounting Statements and Reports, 3 Hrs
305. Cost Accounting, 3 Hrs
306. Tax Accounting, 3 Hrs
307. Municipal Accounting, 3 Hrs
308. Principles of Auditing, 3 Hrs

The basic accounting curriculum may well be expanded along the lines and in the areas outlined in the basic courses. Additional courses (with suggested titles and numbering) may be provided as follows:

401. Special Problems in General Accounting, 3 Hrs
402. Special Problems in General Accounting (continued), 3 Hrs
405. Advanced Cost Accounting, 3 Hrs
406. Advanced Tax Accounting, 3 Hrs
407. Governmental Accounting: State and County, 3 Hrs
408. Public Accounting, 3 Hrs

The accounting curriculum may well be expanded further to provide the necessary training for graduate and professional students. Additional courses and areas to be studied (with suggested titles and numbering) may be provided as follows:

501. Advanced Accounting Theory, 3 Hrs

502. Advanced Accounting Theory (continued) 3 Hrs
503. Special Problems in Private Accounting I, II, 3–3 Hrs, such as Controllership, Internal Auditing, Budgeting.
505. Special Problems in Cost Accounting I, II, 3-3 Hrs
506. Special Problems in Tax Accounting I, II, 3-3 Hrs
507. Special Problems in Governmental and Institutional Accounting I, II, 3-3 Hrs (a) Hospitals; (b) Schools and Colleges; (c) Budgeting; (d) Auditing
508. Special Problems in Public Accounting I, II, 3-3 Hrs
604. Internship in Private Accounting, 3 Hrs
607. Internship in Governmental and Institutional Accounting, 3 Hrs
608. Internship in Public Accounting, 3 Hrs
609. Research in Accounting, 3-3 Hrs

The courses may be presented in another way to show related groups:

General Principles and Practices (24)

201. Principles of Accounting, 3 Hrs
202. Principles of Accounting, 3 Hrs
301. Accounting for Assets, Incomes and Expenses, 3 Hrs
302. Accounting for Ownership: Creditorship and Proprietorship, 3 Hrs
303. The Accounting System and Internal Control, 3 Hrs
304. Preparation and Analysis of Accounting Statements and Reports, 3 Hrs
401. Special Problems in General Accounting, 3 Hrs
402. Special Problems in General Accounting, 3 Hrs

Cost Accounting (12)

305. Cost Accounting, 3 Hrs
405. Advanced Cost Accounting, 3 Hrs
505. Special Problems in Cost Accounting I, II, 3-3 Hrs

Tax Accounting (12)

306. Tax Accounting, 3 Hrs
406. Advanced Tax Accounting, 3 Hrs
506. Special Problems in Tax Accounting I, II, 3-3 Hrs

Governmental and Institutional Accounting (15)

307. Municipal Accounting, 3 Hrs
407. Governmental Accounting: State and County, 3 Hrs
507. Special Problems in Governmental and Institutional Accounting I, II, 3-3 Hrs
607. Internship in Governmental and Institutional Accounting, 3 Hrs

Private Accounting (15)

501. Advanced Accounting Theory, 3 Hrs
502. Advanced Accounting Theory, 3 Hrs
503. Special Problems in Private Accounting I, II, 3-3 Hrs
604. Internship in Private Accounting, 3 Hrs

Public Accounting (15)

308. Principles of Auditing, 3 Hrs
408. Public Accounting, 3 Hrs
508. Special Problems in Public Accounting I, II, 3-3 Hrs
608. Internship in Public Accounting, 3 Hrs

The content of the courses may be summarized briefly as follows:

201, 202. Covers business fundamentals, analysis and recording of simple transactions, the preparation of financial reports, including partnerships, corporations and manufacturers.

301. Covers the valuation of assets and the determination and measurement of incomes and expenses in accordance with generally accepted accounting principles.

302. Covers the generally accepted accounting principles used in accounting for liabilities, partnerships and corporations, including capital stock, surplus and reserves.

303. Covers the functions of management, internal organization, the accounting system and the use of business papers, records and reports, and internal control over personnel, property and financial operations.

304. Covers the form, content and use of formal and informal, major and minor statements and reports prepared for management and for publication, and how to analyze, read and interpret their meaning through the use of ratios, comparisons, trends, charts and graphs.

305. Covers the generally accepted accounting principles used in determining departmental, unit, specific order, and process costs.

306. Covers the basic principles of accounting

and rules of law governing the determination and measurement of taxable income and the tax liability of individuals and organizations.

307. Covers the generally accepted accounting principles used in accounting for funds and governmental units, but primarily limited to and with particular emphasis on municipal accounting problems.

308. Covers the generally accepted principles, practices and standards of auditing which underlie current practices in internal and public auditing.

401. Covers such special subjects as: consignments, installments, insurance, statement of affairs, receiver's accounts, estates and trusts, and foreign exchange.

402. Covers such special subjects as: foreign and domestic branches, parent and subsidiary accounting, consolidations and mergers, and others.

405. Covers the generally accepted cost accounting principles used in cost estimates and estimating cost systems, cost budgets, standard costs, distribution costs, joint and by-product costs, uniform cost methods, and other problems.

406. Covers the basic principles of accounting and the rules of law governing the tax liability of partners, corporations, and others, and the use of tax services and other references in dealing with advanced tax matters of complicated nature.

407. Covers fundamental principles and practices of central state accounting; principles and practices governing proper accounting for various state and county offices, such as revenue department, state road department, county schools and county commissioners.

408. Covers fundamental principles and current practices in public accounting relating to preparation of working papers and reports; auditing, tax and other services of the public accountant; regulation of public accounting and legal and ethical standards; and other problems met in public accounting practice.

A considerable amount of flexibility and freedom in the selection of particular "problems" for study in the graduate courses may be maintained. Not only may current and valuable material be studied, but the length of the course can be adjusted easily to the requirements of the area covered. The courses may be on a one-semester basis or a two-semester basis, depending upon the judgment of those concerned. Such an arrangement also makes it possible for the college to avail itself of the talent and experience of experts and specialists in the study of selected subjects.

The course "Special Problems in Public Accounting," which may be either a one or a two-semester course, might include for study such topics as: some professional aspects of accountancy; building and keeping a clientele; professional organizations and literature; legal and ethical responsibilities of the accountant; filing systems for an accountant's office; staff selection, training, and compensation; fees for services; duties of the junior and senior accountant, and so on.

For the course "Special Problems in Tax Accounting," a great number and variety of current tax problems of interest and value to the advanced accounting student are available for study. These may include: planning for maximum capital gain benefits; investments in livestock, growing crops, timber and mines; pitfalls in pension and profit-sharing plans; recent developments in employee stock options; corporate reorganizations; estate planning; excess profits taxes; preparation of a tax brief; and others.

A CASE AGAINST THE IDEA OF AN ALL-PURPOSE CONCEPT OF BUSINESS INCOME

CHARLES E. JOHNSON
Associate Professor, University of Oregon

WE LIVE in an age of multipurpose processes and products. Industry is committed to the development of plants which are equally adaptable to the production of "guns and butter." On a more mundane level, "Duz," if we are to believe our eyes and ears, already does everything. The combination penknife, screw driver, file, drill, and letter-opener appeals to the innate sense of economy in all of us.

In the area of financial reporting there is evidence of a collateral feeling that the attempt should be to achieve multipurpose results. This is manifest in the renewed struggle for an all-purpose concept of business income. One encounters with declining frequency a writer on this subject who is not at least *aware* of the pitfall of shifting from one income concept to another while attempting to discuss refinements in the measurement of income. Such sophistication is a valuable product of the vast amount of study and research in this area during the last decade. But the search continues for an all-purpose concept of business income which will serve all needs for such information.

This article constitutes a case for abandoning that search. Its thesis is that, in the face of a variety of uses for business income, we should develop for external corporate reporting a concept of business income which is focused on a relatively narrow area of usefulness. A basic decision in this area, i.e., what uses shall be served, is a necessary prelude to a consideration of the relative merits of various concepts of income and their measurements; and it is the prelude only with which we are here concerned.

It will be necessary to start from a premise as to the criteria by which business income is to be judged. It should be clear at the outset that an appeal to fundamental or immutable laws or principles as a basis for making a choice is futile. Business income is a social concept derived from the desire for useful information concerning the affairs of the enterprise. Reasoned preferences may therefore be expressed, to be judged in the light of experience, but a search for proof of superiority is a chimerical quest.

Three general criteria by which income concepts might be judged, and the general importance of which most students of the subject would confirm, are:

1. The concept must be useful in meeting the purpose for which a measure of income is desired. The obviousness of this choice scarcely needs to be belabored.[1] This means that a clear-cut preference for one income concept over another must be based to a very major degree on the fact that that concept produces a result which meets the needs of those who are concerned with business income, and in order to make any sort of intelligent appraisal we must then consider what these needs are.

[1] "We should have some concept of the income we are trying to measure. Unless we are to revert to sterile scholasticism the definition of the concept should bear some relation to the puropse to which the results are to be put." Carl T. Devine, "Depreciation and Income Measurement," ACCOUNTING REVIEW, January, 1944, p. 47.

2. The concept must be capable of implementation, in the broadest sense of that term. But the ramifications implied by this quality are such that they require further consideration. A first element would be the problem of measurement. A concept of income which is not measurable may be useful as a pedagogical device in developing the basic notions behind measurable concepts or demonstrating why practical notions fall short of a workable number of variables, or to indicate the basic nature of the problem shorn of all its complications. It is not denied that immeasurable concepts may be useful and important; it is always possible that what appears immeasurable at one stage of our knowledge may be measurable at some later time. But the quality of statistical measurability is basic to any concept of income which is to forge its way out of a cloistered existence in abstract theory and take its place as a foundation for the development of accounting conventions and procedures.

Strict measurability, however, is not all that is implied by the term implementation, if measurability is interpreted to mean merely that it is possible to express such income as a quantity of money or money equivalents; for such an expression may be applied to even very abstract notions. The subjective satisfaction obtained as a result of owning a fine painting may be expressed in terms of money by the person experiencing it, and might even be estimated by someone else. In this sense it is measurable. But in assessing the significance of enterprise inputs and outputs for the purpose of determining its income, data less subjective than the utility placed on economic goods and services by their possessor is ordinarily desirable. For some purposes, at least, a workable concept of business income must meet a more restrictive criterion than strict measurability.

This element of the general quality of implementation requires that the measurement of business income should be based on evidence which is both objective and subject to independent verification.[2] Business income for many purposes constitutes a statistical quantity in which opposing interests may have a great deal at stake. It is in the interest of persons or institutions that the quantum be larger or smaller under particular circumstances and conditions. This means that an income concept which makes use of statistical data which are subject to a limited degree of manipulation, and which can be tested and verified by impartial and independent parties external to those most concerned, will rank high by this standard.

The final element of the quality of implementation might be called administrative feasibility. The process of translating a concept of income into statistical form is likely to be expensive in terms of time and effort expended. The relationship between maximum usefulness and the cost and inconvenience of deriving the data must be reconciled in deciding to adopt or reject a particular concept of business income. Rough approximations may be preferred over precise calculations if it can be estab-

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[2] Objectivity is used here in the sense well expressed by William Vatter, who points out that there is nothing objective in any economic data *per se;* "All interpretations of data are made from experience, and all facts are but generalizations from experience. . . . The important element in an 'objective' representation is that the experience to which given data are referred for interpretation must be a 'social' experience; else the representation cannot carry meaning to the recipient. Objectivity is the *agreement* of intelligent persons as to the significance of independently observed data; it implies not only separate experience or observation on the part of different individuals but also a communal reporting of those observations, attempts to differentiate those separate impressions, and when the group can make no differentiation between the individual reports, a final agreement as to the unanimity of the separate experiences. Objectivity is a social, not an individual phenomenon; its significance is relative, depending upon the amount of agreement that arises from the processes which have been described." *The Fund Theory of Accounting*, p. 67 (footnote 40). See also Frank H. Knight, " . . . the essence of the idea of objectivity is conscious social consensus." "What Is Truth in Economics?" *Journal of Political Economy*, February, 1940, p. 11.

lished that the cost involved in producing the latter is not warranted by the benefits to be derived from the results obtained.

3. A third criterion is that the concept of business income should be in reasonable conformity with what the average person who is interested in the results or the average businessman, understands income to mean; i.e., that it should be readily understood and interpreted.[3] This does not imply that the concept should be restricted to the lowest common denominator of understanding. Admittedly, it might be very desirable if economic concepts were so simple that they could be grasped by anyone without the necessity of study and training. The scope of the ideas involved in the related concepts of income and valuation, however, are not simple, and no amount of wishing will make them so. Therefore, while those who are charged with the responsibility for deriving business income must make every effort to present such information in as clear and unequivocal a manner as possible, the desire for simplicity and clarity should not be allowed to obscure the issues involved. Catering to the notion that business income is a simple fact is more likely to promote misunderstanding than enlightenment. The road to understanding lies in the knowledge that the measurement of business income over short periods of time under any concept rests solidly on a broad base of estimates the essential "correctness" of which can only be established with the passage of time, rather than in the easy and comfortable assumption that income can be reduced to a statistical quantity which can be digested without further effort.

[3] "A good definition should conform to two tests; it should be useful for scientific analysis; and it should harmonize with popular and instinctive usage—so far as this second condition is feasible and compatible with the first." Irving Fisher, "The Income Concept in the Light of Experience," English reprint. (The original publication of the article was in German in Vol. III of the Wieser Festschrift, Die Wirtshafttheorie der Gegenwart, 1927, Vienna, p. 29.)

These three general criteria are not, of course, independent of one another. In considering any set of criteria by which to judge a social concept, it is likely that unless some single standard can be agreed upon as so vital to the problem that it outweighs all others, conflicts will necessarily arise among various possible criteria. In the engineering of an automotive motor, for example, the standard of efficiency in fuel consumption must be weighed against the cost of producing an efficient engine and the fact that the consumer may desire a product in which efficiency has been sacrificed for comfort, ease in handling, and ability to accelerate rapidly in pulling away at the stop signs. All three of these objectives in some phase of construction lead designers in different directions. This same conflict arises in making the choice among different concepts of business income.

The primary source of this dilemma is the fact that many different persons and institutions in our society make use of business income data. It would appear probable that each would use business income for a different purpose and that, therefore, each would attach a greater or lesser weight to any particular criterion. We may reconcile ourselves to the proposition that the ideal of a general purpose income figure is essentially unattainable. The phrase "different income concepts for different purposes" has become a standard prelude to most discussions of the problem.[4]

We are therefore faced with several alternatives. One possible approach would

[4] James C. Bonbright correctly saw that this was in large measure a corollary of his own conclusion that appropriate concepts of valuation likewise depend largely on specific purpose or use. *Valuation of Property*, Vol. I (New York: McGraw-Hill, 1937), p. 253. See also Willard J. Graham, "Changing Price Levels and Income," Accounting Review, January, 1949, p. 18; George O. May, *Financial Accounting* (New York: Macmillan Co., 1943), pp. 19–21; Stephen Gilman, *Accounting Concepts of Profit* (New York: Ronald Press, 1939), pp. 610–11.

be to consider each of the special purposes for which business income is used, and the concept which would best fit this purpose. This would of necessity be a vast undertaking. A more limited project would involve choosing one specific use and developing a concept to fit that need. The modern corporation, however, is a semipublic institution and it is not likely that its reports will ever be slanted to one particular purpose.

It would be desirable to distinguish those uses of income which are highly specialized in important respects in order to establish a basis for granting precedence in corporate reports to a concept of business income which will satisfy the general need for such information.

An attempt will be made, on these grounds, to distinguish from among the major uses of business income: (1) Those for which business income is adopted because as presently measured by the accounting process it represents an administratively convenient approximation to the information desired. (2) Those for which the choice of concept rests largely on considerations of equity and public policy; in these choices the conflict is likely to center not on the determination of what income is, but a determination of how equity and public policy shall best be served. (3) Those uses for which no ex-post concept of business income is likely to be satisfactory.

If such distinctions are accepted, this will leave a residual of uses which may be reasonably granted precedence in shaping an income concept best suited to general corporate reporting. It is believed that a basis exists for distinguishing on one or more of these grounds five major uses of business income:

1. As a basis for taxation
2. As a component of the measure of national income
3. As a basis for determining the legality of distribution of corporate property to shareholders
4. As a measure of the reasonableness of the prices charged by the corporation for its products and services
5. As a basis for managerial decisions in conducting business operations

A brief analysis of each of these uses will indicate the basis for distinction and important issues raised by each.

1. *Business Income as a Tax Base*

The passage of the 16th Amendment on March 1, 1913, established the constitutionality of a tax, levied without apportionment among the states, to be based on income from whatever source derived. While few experts today seriously question the general desirability of the use of personal income as basis for taxation, the use of corporate net income as a tax base in the U. S. system of federal business taxation has been the subject of considerable criticism.[5] Whatever the merits of these objections, it is unlikely that business net income in some form or another will be abandoned as a tax base in the foreseeable future. The concept of business income which will best meet this need should be judged by the general standards applicable to any form of taxation. Three standards generally adopted in most discussions of the subject are: equity among subjects taxed; economic consequences; and administrative feasibility.

The test of equity as applied to business income taxation must be considered with reference to two classes of tax subjects: the

[5] One of the most persistent objections has been based on the claim that the corporate income tax constitutes a "double taxation" of stockholders' income. For an answer to this argument and a discussion of four positive bases for justifiying a corporation income tax, see Richard Goode, *The Corporation Income Tax* (New York: John Wiley and Sons, 1951), Chapter 3. Cf. Studenski, who favors abandoning net income as a tax base in favor of a "value added" base similar in concept to that used in compiling national income statistics: H. M. Groves, *Viewpoints on Public Finance* (New York: Holt & Company, 1947), p. 276.

business entity and the individuals who hold an interest in that entity. A general criterion might be established on the basis of a presumption that different social units (individuals or business entities), other important characteristics being constant, should be subjected to similar tax treatment in the attainment of similar net wealth positions. Inter-enterprise equity as a standard for determining the most useful concept of business income is patently a relative concept. It implies an equal treatment in the assessment of taxes, rather than any pure or absolute concept of equity. For example, if enterprises whose income is largely fixed in terms of dollars are not allowed to adjust income for tax purposes to reflect the fall in the value of money occasioned by a general rise in the price level, equity may be served if those who gain in dollar terms as a result of that same general rise are subjected to a tax on this gain. This does not require a determination of whether such gains are or are not income; it operates merely as a means of equalizing among firms the tax impact resulting from the effect of price level changes on net wealth position. Equity might also be served if the fixed-income enterprise were allowed to take credit for the change in the significance of its money income, while the variable-income enterprise was exempted from a tax on "price level" gains; but this again is a matter of adjusting the burden of taxation in order to equalize its effects.

The general criterion of equity (or perhaps a closely related consideration of convenience in compliance) may also be the rationale for taxing realized gains of all types and excluding unrealized gains from taxable income, in order to postpone the tax levy until the taxpayer has acquired the means to meet his tax liability. Equity may also rule in determining whether enterprises affected by abnormal conditions beyond their control shall be allowed concessions in computing income.[6] Without attempting to present a complete list of such instances, nor to evaluate each of these issues, it would seem that the conclusion is warranted that the equity test is a specialized criterion, related to tax policy, which does not afford any fundamental basis for determining what business income is.

Equity considerations in tax policy must always be balanced against probable economic effects which provide an additional standard by which to evaluate the statutory concept of business net income. Given the business income tax as an element in the tax structure, the issue involved is how the concept of taxable business income may be shaped as a means of furthering national economic and fiscal policy. If, for example, it is determined that it is in the national interest that the business income tax levy should operate as an element of counter-cyclical fiscal policy, it may be argued that a concept of income which produced high taxable incomes (and thus taxes) during periods of boom and inflation and low taxable income (and taxes) during periods of recession and deflation would be desirable by this standard. On the other hand it may be felt desirable to adopt measures which will reduce fluctuations in business income in the hopes of reducing fluctuations in business expectations and investment. These conflicting considerations must be weighed in appraising such income smoothing devices as LIFO and accelerated depreciation.[7]

[6] Section 22 (d) (6) of the Internal Revenue Code, which provides that companies using a LIFO basis of inventory pricing shall be allowed to deduct the cost of replacing them rather than their book value in determining income during periods in which the "base stock" is depleted as a result of post war scarcities, was advocated on equity grounds in the Senate Committee on Finance. See Arthur H. Dean, *An Inquiry into the Nature of Income under Present Price Levels* (New York: American Institute Publishing Co., 1949), p. 58.

[7] A recent study takes the reasonable position that the stabilizing effect of counter-cyclical tax collections is the more important consideration in setting depreciation allowances for tax purposes. E. Cary Brown,

Economic considerations may also be used as a partial rationalization for allowing different bases of computing income to enterprises in particular industries, as exemplified by the preferred depletion allowances now granted to a wide range of companies engaged in exploration and exploitation of natural resources. The special accelerated amortization of facilities devoted to the "defense" effort, currently allowed in the computation of business taxable income, may also be justified on economic grounds as a means of encouraging industrial expansion in a particular direction.

Whether these provisions constitute methods of granting tax reductions or tax postponements to certain segments of the economy or in essence a modification in the definition of taxable income, their primary justification should rest on economic considerations. That economists are likely to differ in their evaluation of the economic implications and thus the relative desirability of such provisions does not obviate the point that such considerations play an important role in shaping taxable income but bear no necessary relationship to the problem of determining what income is.

Finally, the criterion of administrative feasibility may be applied as a basis for evaluating concepts of taxable income. One of the objectives controlling the administration of an income tax statute is that an attempt should be made to assess the tax liability at the time when it may be most conveniently collected. This is not only an attempt to maximize the immediate revenue potential, but also a means of minimizing the risk that postponement of the tax will result in a failure to collect it at all. Likewise, it may be considered wise administrative policy to adopt rather arbitrary rules governing procedures which affect the timing of income recognition, since the variation in tax rates among years may encourage the corporate taxpayer deliberately to adopt procedures which shift income out of what are expected to be high tax-rate periods, and into what are expected to be relatively lower income tax-rate periods.[8]

Despite the fact that the basic provision of the Internal Revenue Code with respect to the general nature of taxable income refers to a presumption that "net income shall be computed upon the basis of the taxpayer's annual accounting period . . . in accordance with the method of accounting regularly employed in keeping the books of such taxpayer; . . ."[9] the concept of statutory income for tax purposes has frequently diverged from accounting income as computed under "generally accepted principles."[10]

Effects of Taxation: Depreciation Adjustments for Price Changes (Cambridge, Massachusetts: Harvard Business School, Division of Research, 1952), p. 15.

[8] Such rules may operate to accelerate the recognition of taxable income (in comparison to accounting income), as in the case of advance payment under lease contracts (this is a general rule established by a series of legal cases). See O'Day Investment Co. v Commissioner, 13 BTA 1230 (1929), and C. H. Mead Coal Co. v Commissioner, 31 BTA 190 (1934). In other instances income recognition is postponed, as in the case of so-called "tax-free" exchanges (Internal Revenue Code, Section 113 (b)).

[9] Internal Revenue Code, Section 41.

[10] A study of the relationship between accounting income and taxable income over the eight years 1929–1936 indicated that while on the average for a large number of corporations in several major industries the divergence was less than 10% (accounting income exceeded statutory income by this proportion), the divergence with respect to individual companies and within specific industry groups ran as high as 50% or more. J. K. Butters and D. S. Smith, *Taxable and Business Income* (New York: National Bureau of Economic Research, 1949), Chapter 9. The largest sources of divergence were, in order of significance: a) differences in annual depreciation and depletion allowances; b) the disallowance as a tax deduction of various "reserves;" c) a differential tax treatment for capital gains and losses; and d) differences in the amortization of various intangible assets.

While a total of 15 individual sources of divergence were isolated, the above four were considered to be of major importance. It is possible to classify these sources into two general categories:

1. Differences in the timing of income recognition by fiscal periods.
   a. Timing of depreciation allowances. (In general companies charged larger amounts for depreciation than were allowable for tax purposes.)

Such divergences evidence the fact that Congress in establishing statutory income is motivated by political, economic, equity, and administrative considerations which play an important, and in some cases an extremely useful, part in shaping the business income concept appropriate as a tax base. Whenever it can be shown that valid reasons exist for such provisions, they should be judged on their merits in relation to standards of good tax practice, and not necessarily on the basis of any general concept of business income. There has been a tendency for accountants to deplore the existence of various deviations from accounting income,[11] but such a position must be based on: a) the avowed intention of Congress to adapt taxable income to accounting income; or b) that the latter is somehow a "correct" concept, and thus departures from it are necessarily in error. The first is a question of fact in relation to statutory intent. The second position may be taken in good faith on the basis of reasoned preferences for one income concept over another in furthering a wise tax policy in accordance with whatever standards are deemed desirable; but the position that statutory income is wrong insofar as it differs from accounting income, simply because of that divergence, appears to be untenable.[12]

As citizens taking a responsible interest in public affairs it is clearly appropriate for accountants to argue the relative merits of concepts of statutory income. As accountants it would appear desirable to take the position that accounting income should be adapted to whatever concept appears to be most generally useful in reporting corporate affairs and that such concepts should not be influenced by statutory provisions with respect to taxable income.[13] Such a position would reflect a recognition of the fact that the standards governing taxable income are the specialized product of a set of considerations not necessarily germane to a determination of business income for other purposes.

2. *Business Income as a Component of the Measure of National Income*

One of the weapons frequently employed against the accounting concept of income is the fact that material adjustments for inventory price changes and depreciation are made officially and unofficially in connection with the use of such data. The implication is that there must be something seriously wrong with data which must be adjusted in order to be useful in macroeconomic analysis.

However one may feel about the merits of the present concept of income employed

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b. Amortization of intangibles. (In the case of patents and research costs companies tended to write them off over shorter periods of time than allowed for tax purposes.)

c. Disallowance of reserves. (Companies tended to provide conservatively for possible losses, which if realized were eventual tax deductions in later periods.)

2. Differences attributable to the use of income tax as a policy instrument.

a. Differential status granted to depletion allowances based on a per cent of gross revenues.

b. Differential rate structure applied to capital gains and losses.

[11] See for instance, Robert H. Montgomery, "Administrative Tax Accounting Fallacies," *Journal of Accountancy*, Vol. 78 (July, 1944), p. 14, and James L. Dohr, "Income Divorced from Reality," *Journal of* Accountancy, Vol. 66 (December, 1938), p. 361, and J. K. Lasser, "Tax Accounting Incongruities," *Journal of Accountancy*, Vol. 83 (March, 1947), p. 221.

[12] Butters and Smith comment, "Any attempt at a reconciliation of the two income concepts, as far as reconciliation is desirable, should start with an understanding of the differences and the reasons for them rather than with any tacit assumption that one or the other concept is correct." *Taxable and Business Income*, p. 4.

[13] This position would provide grounds for opposition to such provisions of the tax law as the requirement that the use of LIFO for tax purposes is conditioned on its concomitant use in corporate reports. (Internal Revenue Code, Sec. 22 (d) (2) and (5).) Whether one favors LIFO on grounds other than tax economy or not, there would appear to be little justification for an attempt to dictate accounting procedures through tax law. LIFO for tax purposes should stand or fall solely on its merits as a means of implementing sound tax policy. Richard Goode argues against LIFO for tax purposes, primarily on fiscal policy considerations, *The Corporation Income Tax*, p. 171.

in accounting, this argument *per se* is not damaging, for there are at least three major bases for drawing a sharp distinction between concepts of income appropriate for aggregative analysis and those applicable to the business entity.

In the first place, for the economy as a whole productivity, in the sense of the creation of consumable product or services plus the net creation of wealth capable of providing consumable product or services, is the usual measure of well being. With respect to the stock of wealth only a physical increase is considered productive. But for the individual firm the change in the money worth of property or property rights which does not parallel either the general price level or a particular price level with which the enterprise is concerned is of definite significance in the calculation of periodic income.

Secondly, for the economy as a whole the exchange transaction is merely the means by which the ownership of property is transferred among subsidiary social units. As such it may or may not be an indication of productivity which is of significance in the measurement of national income. From the viewpoint of the business enterprise, however, the transaction is the focal point of business activity. This means that the conversion of property or services into a different form through the medium of an exchange transaction with independent parties may in a great many instances produce a gain or loss from the standpoint of a business unit which is entirely irrelevant to the social income.[14]

Finally, the costs which are important to the business firm are related to past, present, or future money payments to parties external to the enterprise. The costs which are relevant to an economy, however, must be the quantities of scarce resources which are lost or used up during a period of time, weighted according to their significance. There are reasons to believe that in many instances market prices do not correctly appraise the social significance of the lost resources. A wide variety of natural resources may be wastefully exploited with profit to the firm which has gained control over them, but at a price which undervalues them seriously from the long-run social point of view. On the other hand the development of substitute products and techniques for utilizing more plentiful resources in place of those fast becoming exhausted may represent a loss to some enterprises, but it can constitute nothing but a significant gain in the economy as a whole.

Measures of gross and net national product are the result of aggregating the total output of goods and services at their market prices. Measures of national income are the result of aggregating the net amounts paid to the factors of production. It is only natural that in this statistical process business accounts should be used as a vital source of information. It is also only natural that the economic statistician should wish that business accounts were maintained on such a basis that they would provide him directly with data compiled on the basis of concepts relevant to national income and product determination. But it does not follow that such data incorporated into business accounts would therefore provide the most useful information for those interested in the business entity as a particular unit of society.

It is interesting to note that Fabricant, an economist who has played a leading role in the formulation of national income concepts, has himself suggested that the problem facing the social statistician is different in several important respects

[14] The transfer of business property may be made at an excessive price if sold to an uninformed buyer, or may take place at an extremely low figure if sold under the duress of forced liquidation. In either case the resultant gains and losses are of definite significance to the entities concerned, but no social gain or loss emerges from the transfer.

than that facing the firm accountant.[15] Fabricant notes that changes in the relationship between money and economic goods may well be ignored in national income estimates since welfare is defined in terms of stocks of tangible wealth, which are of no greater significance to the community because the quantity of money has changed. The social economist may likewise ignore the effect of differential price movements, and the gains and losses which result from them, on the assumption that on the average the gains will offset the losses; but such gains or losses may have a very real impact on the welfare of a firm or industry.[16]

One additional point of difference may be raised with respect to the relative importance of objectivity in the two concepts. The motivation toward manipulation of social income data is present to a far smaller degree than in the case of business income. The imputation of values on the basis of intelligent estimates is a commonplace part of the process of national income estimation. The statistician who is confronted not only with the difficulty of obtaining the basic data, but also with an overwhelming mass of detailed statistical raw material is forced to rely on sampling techniques, to make reasoned guesses to fill in the gaps, and to adjust the information to his purposes. The difference in the quality of the evidence which may reasonably be admitted to the determination of national income and that which will be tolerated in any workable concept of business income is a factor which must be taken into account in any comparison of the two.

The point is not that we should ignore the careful reasoning behind the economist's measure of national welfare; but where the informational needs of the social statistician and the needs of those interested in the enterprise as a unit in the economy differ, it is the contention that it is the former who should make the necessary adjustments.[17] In formulating the proper techniques, and in aiding in the proper interpretation of business accounts, the accountant should and it is hoped will play an important role. In response to the important need for accurate and useful economic data, businesses may well be encouraged to furnish the required data in statistical reports as a separate project. The concept of business income should not, however, be moulded into a macroeconomic pattern to serve this specialized purpose alone.

3. *Business Income as a Basis for Determining the Legality of Distributions of Corporate Property to Shareholders*

Any attempt to generalize with respect to the legal restrictions imposed on the corporate form of business organization is rendered difficult by the fact that no single uniform corporation code has found general acceptance in the state statutes. In particular the restriction imposed by the

[15] Solomon Fabricant, "Business Costs and Business Income Under Changing Price Levels," *Five Monographs on Business Income* (New York: American Institute Publishing Co., 1950), pp. 151–3. See also Russell Bowers, "Economic and Accounting Concepts," Accounting Review, October, 1945, p. 420–31.

[16] Many items of the firm's intangible wealth (including within the meaning of this term cash, receivables, and debts) cancel out in the consolidation process involved in national income aggregation; yet they are of great significance to the enterprises involved. This difference in viewpoint becomes even more important when the possibility of adjusting for changes in the price level is under consideration since the effect of such changes on the burden of fixed-dollar debts is a significant factor which does not cancel out for the individual enterprise.

[17] Issue is taken, therefore, with the reasoning that since the economist, for national income purposes, is interested "that current costs shall be expressed as nearly as may be in terms of current dollars, and that 'income' imputed to revaluation of inventories and fixed assets shall be excluded," that therefore accountants should incorporate such concepts in their own measure of business income since "if they decline the task, the adjustments which the economists will have to make in measuring the income of the nation or of an industry, will be unnecessarily rough estimates." Business Income Study Group, *Changing Concepts of Business Income* (New York: Macmillan & Co., 1952), p. 83.

corporation codes of the various states on the distribution of corporate resources to its stockholders differ in significant respects. Fortunately, however, a detailed technical analysis of the varying provisions and their interpretation is not necessary to establish the position germane to the present discussion. It will be sufficient for our purpose to consider the general needs to be served by business income concepts in this area. Where statutory provisions are pertinent, therefore, it is believed that reference to one or two fairly typical statutes will suffice as examples of the statutory approach to the problem.

Statutory formulas for computing the amount of the resources of the enterprise which may be distributed to stockholders refer to such terms as capital, surplus, earned surplus, net profits, and net earnings; but one legally competent writer has observed that in general no detailed attempt is made in the dividend statutes to define clearly such basic terms.[18] Dean writes:

> Historically, and as a broad generalization, the legal rules in the various states have evolved in two major patterns: the "net profits" rule, under which dividends may only be paid out of earned profits; and the "capital impairment rule" under which dividends may only be paid out of the excess of assets over liabilities and capital stock.[19]

Distributions of property by the corporation to its stockholders may occur normally in three situations. (1) In connection with the liquidation of the enterprise and the distribution of a pro-rata share of the remaining net assets to the holders of the residual interest. (2) In connection with the repurchase by a corporation of its own shares. (3) In connection with the declaration of a dividend which may be based on an intent to distribute earnings or to repay a prorata portion of the contributed capital. It is in connection with the second and third situations that the statutory provisions refer to current or past income as a basis for determining the legality of the distribution.

It would appear that in general the function to be served by such restrictions is that of protecting the interests of various parties whose rights in the corporation and with respect to each other are essentially adverse. On this line of reasoning we may distinguish two general objectives:

(a) As a protection for shareholders in their relations with their elected representatives who manage and operate the corporation. It is well established that directors and their appointed agents owe a fiduciary responsibility to the shareholders. It is a part of this responsibility to properly label corporate distributions and to distinguish distributions of income from those which constitute a return of capital investment. This necessarily involves some conceptual basis for separating income and capital, and some criteria for determining when capital has been maintained intact in one form or another.

(b) To protect those whose interest in the corporation is essentially adverse to that of the shareholders. The law appears to assume that these adverse interests (creditors and in some instances preferred stockholders) have the right to an assurance that some part of the assets representing the investment of the residual equity shall remain in the business at all times as a margin of protection against the

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[18] Arthur H. Dean, "Business Income Under Present Price Levels," Paper prepared for Business Income Study Group (February, 1949), p. 71.

[19] *Ibid.*, p. 68. The use of the phrase "paid out of" earnings is evidently an expression common to most of the statutes. Such phraseology obviously is not a precise expression of the nature of corporate distributions, which typically involve the actual separation of assets from the control of the corporate entity to the stockholders, or as in the case of stock dividends represent the reclassification within the proprietorship quantum from the retained earnings to the stated capital category. Whether the common employment of such inexact phrasing operates to promote confusion in the interpretation of the law is difficult to determine. No serious objection to it is found in the literature, and it is apparent that an exact expression would complicate the wording of the statutes considerably.

risk of losses. This right is generally considered to be an offset to the limited liability granted to corporate stockholders, which prevents creditors from looking beyond the corporate entity for the satisfaction of their claims. The minimum required stated capital thus provides a cushion of protection against adversity which defines the extent of the risk absorbed by the residual interests for those who contribute resources under fixed commitments.

In general the statutes and the courts leave the determination of "earnings" up to the judgment of the corporate directors unless there is evidence of fraud or negligence. Several of the statutes, however, specifically mention that depreciation shall be taken before arriving at earnings available for dividends; that in wasting asset concerns, however, depletion need not be taken into account; and that cash dividends shall not be based on unrealized appreciation of assets.[20]

It is a safe generalization that dividends may always be based upon current and retained earnings, subject to a general limitation in the statutes of several states that cash or property dividends shall not be paid where reasonable grounds exist for the belief that total liabilities exceed the assets of the corporation. Dean, however, points out that courts which have had the occasion to interpret the meaning of the "value of assets" in such statutes differ in their opinions as to whether it means the present fair market values, or whether assets are to be valued on the basis of cost.[21] In either case this limitation does not insure against the return of contributed capital to stockholders under the dividend label; it can only be construed as protection of a rather minimum type for creditors.

Examples may be found of statutes which permit the payment of dividends based on paid in surplus, although several such statutes permit such payments to preferred shareholders only, and some require that the source of such dividends be disclosed. Statutory provisions may also be found which allow the payment of dividends based on current earnings even though a deficit exists from prior periods' operations.[22]

Limitations on the distribution of property through the repurchase by a corporation of its own shares are based, in some states, on the existence of earned surplus.[23] This may be construed as an attempt to discourage dealing by a corporation in its own shares, as well as a protection for creditors against the reduction of stated capital.

From this cursory review of the statutory provisions it may be concluded that no unified attempt appears to have been made to incorporate in the statutes any particular concept of income as the basis for determining the legality of dividends. The possibility of dividend distributions which represent in effect a return of capital under most meanings of this term exists in almost all of the statutes. This leads us to the belief that the legislators have framed these statutes, not with the intent to establish rules for wise dividend policy, but to protect the interests of various parties

[20] See, for example, Pennsylvania Business Corporation Law, Section 701.

[21] Arthur H. Dean, *op. cit.*, p. 71. Kripke, "Accounting Facts and the Law," 50 Yale Law Journal 1180 (1941), cites several cases in which the balance sheet values were ruled relevant, and this position is recommended by Kaplan and Reaugh, "Accounting Reports to Stockholders and the SEC," 48 Yale Law Journal 935 (1939). On the other hand Dean cites the New York case of Randall v Bailey, 288 New York 280 (1942), as ruling that the present value of assets was the controlling factor in such a situation.

[22] Detailed reference to such statutes is made in Hatfield, Saunders, and Moore, *Statement of Accounting Principles* (American Institute of Accountants, 1938), notes on pages 118–120.

[23] California has a particularly stringent provision which sets forth 5 specific circumstances under which the repurchase of corporate shares may operate to reduce stated capital. In all other situations stated capital is unchanged, and earned surplus is reduced to the extent of the cost of the shares reacquired. Sec. 1706–7, California Corporation Code.

having contractual rights in the corporation.

From the creditor's viewpoint, a protection of his interests does not necessarily require that distributions to stockholders be limited to cumulative income. His rights are defined by contract, and he enters into dealings with the corporation on the basis of the limitations of his risk provided in the statute. An ideal statute from his viewpoint would define stated capital as broadly as possible to include at least the amounts contributed by stockholders, and to severely restrict its reduction through distribution; but where statutory limitations are not sufficient he may insert clauses in his contract which limit dividends far more severely than the statutory minimum. The viewpoint of preferred stockholders will be similar. From the viewpoint of the residual stockholder, the protection of his interests lies primarily in a full disclosure of the nature of the distributions. This will allow a considerable range of freedom to the directors in contracting or expanding operations. Such a view presupposes that it is not a function of the law to define wise dividend policy in relation to the maintenance of the concern at any given level of operations.[24]

Thus while it might be desirable that legal rules be adapted to some consistent basis for limiting dividends, it is entirely possible that such a basis might be determined by tests other than the existence or nonexistence of income. The legal requirements must be followed, until changed, but there would appear to be no serious reason why the legal objectives could not be adapted to any concept of income which might receive general approval for other purposes.[25]

4. *Business Income as a Test of the Reasonableness of the Prices Charged by the Corporation for Its Products and Services*

The development, through the use of the corporate form of business organization, of the large scale "national" corporation, whose operations and policies inevitably affect large segments of the community, has led to a growing amount of interest in the financial affairs of such companies by parties who have no creditor or ownership interest in them. This is particularly true during periods of scarcity and inflation, when the excess of demand over supply leads to an extreme upward movement in prices. In such periods the business income reported by large scale corporations becomes the subject of close scrutiny by consumer organizations, labor unions, and at the instigation of various such groups, by legislative bodies.[26] Income is often cited as a test of the existence or nonexistence of "excessive" prices under such conditions. Groups which feel that prices are too high are likely to use concepts of income which will maximize the result and thus emphasize their point. Those who support corporate price policy make use of

[24] At least one writer has suggested that the statutes should be broadened to include such protection. He argues that most successful corporations would "commit suicide" were they to pay dividends to the extent legally permissible, and suggests that the danger of allowing such a reduction should be mitigated by legislation. Lewis A. Carman, "Primary Accounting Concepts," *Journal of Accountancy*, Vol. 61 (May, 1936). On the record this danger would appear slight since there is considerable evidence that the average ratio of dividends to total income has been notably conservative. In any case the policy of the courts and legislatures in refusing to substitute their judgment for that of the board of directors except in extreme cases would appear to be the wisest course.

[25] "It is possible to preserve respect for the operation of law while not confounding matters which are legal from those which are economic. The relationship of dividend to annual profit is a matter of law; the relationship of profit to industrial and commercial operations is the subject of economic inquiry calling for the expert use of accounting instruments." S. W. Rowland, cited in W. T. Baxter, *Studies in Accounting* (London: Sweet & Maxwell, 1950), p. 228.

[26] Witness the recent hearings held by the Joint Congressional Committee on the Economic Report headed by Senator Flanders, for the purpose of investigating corporate profits and prices. The results of this investigation have been summarized in *Profits*, Report of a Subcommittee of the Joint Committee on the Economic Report (Washington: Government Printing Office, 1949).

concepts which tend to minimize income and thus support their position that prices are not unduly high.[27]

A brief examination of three instances in which the "reasonableness" of business income is at issue will serve to indicate the role which the business income concept plays in such controversies:

1. As an element in governmental rate and price regulation. Where the franchise granted to a corporation is of such a nature as to create a "natural" monopoly, various governmental commissions are endowed with the task of protecting the consuming public from exploitation in the form of unreasonable prices.[28] Insofar as business income is at issue the problem is twofold: 1) a determination of what the income of the regulated enterprise is; and 2) the setting of some standard against which to judge the reasonableness of such income.

According to Bonbright,[29] regulatory commissions when faced with the problem of choosing criteria by which to judge the reasonableness of utility rates have, in their divergent views on the matter, generally adhered to two different standards of reasonableness.

The first test might be called a "cost plus" test, the plus being a fair rate of return to investors. According to this test the level of rates is reasonable if the resulting revenues are sufficient to yield a well managed company an adequate but not excessive rate of monetary return (on some rate base) over and above its operating costs.

The second test is often referred to as the "yardstick" criterion. Under this standard the reasonableness of the rates of any given enterprise is determined, not by its rate of return, but by a comparison with the rate charged for similar services by other companies, or by publicly owned and operated facilities.

In the administration of the second test the primary requirement to be met by the concept of business income used (if in fact one is necessary) is that the same concept be applied to both sets of operations, and that evidence be sufficient to indicate that comparability of operating conditions actually exists or that any lack of comparability has been taken into consideration.

In the use of the first test the issues are largely centered on a determination of the rate base, which in turn is a function of the method of valuation adopted in evaluating the total productive assets committed to the public service. Insofar as such issues have been brought before the Supreme Court for decision, the history of public rate regulation may be divided into three legal cycles. Until 1898, it was generally held that rate regulation was a function of the state legislatures. From 1898 until the early 1940's the so-called "fair value" doctrine was in vogue, although subject to continued attack. The general base used in determining "fair value" was the reproduction cost of the properties committed to public service. The death blow to this doctrine is generally regarded to have been dealt by the Hope Natural Gas case in 1944,[30] and the present concept of "original cost when first devoted to the public service" took its place.[31]

[27] In the profits hearings labor representatives clearly favored a money concept of income in the face of a rising price level, while business representatives argued for an income concept which took into account the decline in the value of the dollar. *Ibid.*, cf. pp. 60 and 64. On the other hand in the T.N.E.C. hearings in the 1930's the positions were essentially reversed. Temporary National Economic Commission Hearings, *Investigation of Economic Power*, vol. IX, p. 3675–9.

[28] During periods of inflation and scarcity, industry in general may fall under a similar type of regulation as governmental agencies are established to fix prices and limit the ability of the enterprise to take advantage of a shortage of supply in relation to demand.

[29] James C. Bonbright, *Public Utilities and the National Power Policies*, (New York: Columbia University Press, 1940), p. 13.

[30] 320 U. S. 591, 1944.

[31] For an excellent summary of the leading cases in each of these periods and the development of these various "doctrines" see Charles W. Smith, "Prudent Investment Theory in Public Utility Rate Making,"

Once the nature of the dilemma facing the courts became clear, it was apparent that the basic issues were centered largely on questions of social policy. To allow acquisition costs as a rate base was unsatisfactory since the possession of a monopoly franchise in effect tended to guarantee (within limits set by the competition of substitutes) that a reasonable return would be earned on whatever price was paid for the utility property, thus encouraging the transfer of assets in an attempt to manipulate the rate base. On the other hand it was manifestly circular reasoning to regulate rates by "valuing" the assets, since such values were inevitably a function of the allowable rates. The problem before the courts was basically that of determining not what the property was worth, but what the property should be allowed to be worth,[32] and such a decision centers ultimately on questions of equity between investors and consumers, the desirability of making public utility investments non-speculative in character, the effect of rate-fixing on the efficiency of management, and other issues not directly related to the question of what business income is.

2. Business income as a measure of the ability to pay differentially higher taxes is embodied in the enactment of excess profits tax legislation during both World Wars, and during the current post-war period. Such a tax is sometimes rationalized as a partial substitute for some form of price control. The argument is that by allowing the market to govern selling prices and applying higher tax rates to "unreasonable" profits which result therefrom, a rough sort of equity is achieved between firms which benefit unequally from the price rises connected with the inflationary tendency present during periods of a general scarcity of resources in relation to money in circulation. In recent excess profits tax statutes, two bases have been allowed for determining the amount of profits which are "excessive." One is essentially the past earnings history of the company, adjusted for various growth factors and certain specified causes of abnormality during the chosen base period. The other is the capital invested in the enterprise, determined essentially on the basis of cash or cash equivalents committed to the enterprise.[33]

Considerations of inter-firm equity in relation to the varied impact of abrupt monetary inflation, as well as the economic considerations relating to governmental fiscal policy, are the major factors which govern the choice of a base from which to measure "excess income" for this purpose. The validity of the income concept is less at issue than the question of the appropriate tax base in the light of these objectives.

3. A third instance in which the reasonableness of prices is at issue in relation to business income arises in wage rate bargaining under circumstances in which governmental economic controls are in existence and the issue is whether higher wages can be paid with or without a concomitant increase in prices. Insofar as the reason-

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ACCOUNTING REVIEW, July, 1946, p. 295. Smith points out that the use of reproduction cost as the general basis for establishing "fair value" proved unsatisfactory, aside from disagreement as to its relevance, because of the wide variations in the reproduction costs determined by different and presumably independent appraisers. He cites a study made of valuations reported in the Public Utility Reports for the years 1928–42 in which the average variation in estimates of "fair value" by regulatory commissions and by the utilities was 43% and in some cases the difference was as great as 100%.

[32] "Hence a rate making valuation, properly construed, involves a decision as to what property ought to be allowed to be worth, not as to what the property is already in fact worth." James C. Bonbright, *Valuation of Property*, Vol. II (New York: McGraw-Hill Co., 1937), p. 1180.

[33] In connection with this latter test the "normal" rates of return are adjusted downward as an inverse function of the absolute size of the capital investment. The Excess Profits Tax Act of 1950 increased the allowed rates of return by slightly more than 50% of the rates allowed during World War II. Excess Profits Tax Act of 1950, Sec. 437a.

ableness of income is involved in such a controversy it would appear that the primary problem is that of establishing a common basis for comparison with respect to the corporation and labor as social units.[34] Absolute comparison is meaningless; therefore, a comparison between two points in time is inevitably involved in testing the relative income positions of the two units. If money wages are used as the representation of labor's income, a money concept of income would be an appropriate basis for comparison. If "real wages" are used in assessing labor's position it would appear reasonable that the comparison be made with a concept of business income which allows for the changing significance of money. Thus the problem of choosing a concept of business income which will serve as a valid basis for comparison involves considerations of equity and comparability which are to some extent peculiar to this use of business income.

This necessarily cursory review of the issues involved in establishing policy objectives in these three areas cannot be regarded as conclusive. The purpose is merely to outline briefly the reasons for adopting the view that as one element of the criteria for judging the reasonableness of corporate pricing policies, the relevant business income data must be shaped to fit various standards of reasonableness which are directly related to and conditioned by the policy objectives inherent in each situation.

5. *Business Income as a Factor Influencing Managerial Policies and Decisions*

The role played by ex-post business income as a factor influencing managerial decisions has not been agreed upon by either economists or businessmen. Some economists have considered it to be a definite factor in both price policies and business investment decisions.[35] It is usually endowed with an important position as a factor in determining dividend policy despite evidence that some corporations attempt a policy of stabilizing dividends in the face of fluctuating accounting income.[36]

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[34] In the 1952 Steel Industry wage-price dispute one of the controversial questions of comparability was whether income before or after taxes was the appropriate figure to use in comparing the steel company's improvement in earnings with labor's increased wages. President Truman cited accounting income before taxes, per ton of steel, as the appropriate measure on the grounds that steel workers' wages were gross of taxes, and that additional wages would result in a tax reduction for the corporation. The steel industry spokesmen argued that corporate income after taxes was the appropriate base, since this was the measure of the net increase in assets in which the shareholder had an interest, and any distributions from the corporation to him would be subject to personal income taxes. When industry representatives pointed out the inadequacy of depreciation charges in the light of current replacement costs, labor representatives countered with estimates of the cost of maintaining the employees' standards of living. *National City Bank Letter* (New York, May, 1952), pp. 54–56. Such issues point up the special problems involved in this use of business income.

[35] Norman Buchanan, for example, writes: "The price policies followed by business concerns during depression and prosperity are no doubt seriously affected by accounting statements of cost and net income," p. 289. "The influence of accounting reports on the amount and timing of investment by the enterprise is perhaps less direct than upon price and production policies, but no less real. The reportedly high net incomes of boom periods no doubt tend to give business men an exaggerated impression of the probable level of the marginal efficiency of capital in their respective enterprises. . . . Net income seems to bear a very high ratio to original investment and this high ratio suggests that further commitments will be very profitable likewise. . . . During a downswing and depression, on the other hand, errors in computation in a reverse direction are likely to develop. The accounting reports showing losses or low earnings tend to emphasize the low returns being secured on original cost and therefore the probable low marginal efficiency of capital. The result is that business enterprises are inclined to make few capital goods purchases even for replacement purposes," p. 291. *The Economics of Corporate Enterprise* (New York: Henry Holt & Co., 1940).

[36] On this point a study by the NBER indicates that "The reinvested earnings of the twenties were also drawn upon to pay dividends in excess of current earnings during the early thirties. Here too, however, it is desirable to distinguish between the aggregate for all corporations and its components. According to Statistics of Income, 65% of the cash dividends disbursed in 1931–33 came from corporations that remained profitable, and their dividend distributions in the aggregate were less than their compiled net profits after tax." Lawrence H. Seltzer, *The Nature and Tax Treatment of Capital Gains* (New York: National Bureau of Economic Research, 1951), p. 222.

On the assumption that management is influenced by business income in formulating dividend, pricing, and investment policies, it might be urged that the business income concept should be designed to afford the most useful information for these purposes.

Traditionally economists have assumed, with some reservations, that the primary objective of management is to so apply firm resources as to maximize the net monetary returns to the enterprise and that in general this objective will be accomplished by taking whatever action is necessary to bring about an equation of marginal revenues and marginal costs. Recently, however, there has been a notable tendency to dispute the proposition that management does in fact act to maximize income in this sense. The arguments against the maximization principal may be summarized as follows:

1. Management cannot act to equate marginal revenues and costs since relevant information is not available to them. In the face of extreme uncertainty with respect to many influencing variables only rough rules of thumb as guides to profits are possible.[37]

2. Even assuming the relevant data were available, management is interested primarily in courses of action which will maintain the firm in reasonable health with some expansion, in order to further its own interests as employees, rather than in maximizing stockholders' returns. It is able to take such an independent position due to the diffusion of stock ownership and the effective use of managerially controlled proxies. To the extent this is possible, therefore, and when ever managerial interests are in conflict with maximization of return to stockholders, the former will take precedence.[38]

3. Given the risks attendant with uncertainty as to the effect of his actions on the future net revenue stream, as well as the impact of economic events beyond his control, management, with stockholder acquiescence, may prefer a future revenue stream of moderate size but relatively low amplitude of fluctuation to one which fluctuates widely, even though the latter has a present value larger than the former after giving effect to an allowance for the difference in the risk factor in weighting the probability of either stream.[39]

None of these positions, however, refutes the basic premise that managerial decisions are essentially forward-looking and should therefore be based upon expectations of the future rather than records of the past. Any ex-post concept of income is essentially a record of what has happened in the past; as such, its only relevance to present decisions lies in the influence past results may have on future

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[37] R. A. Gordon, "Short Period Price Determination in Theory and Practice," *American Economic Review*, June, 1948, pp. 265–88.

[38] It has been urged that the interests of management dominate corporate policy to an extent that management represents a viewpoint which might be adopted as a frame of reference for business income determination. Under this view, management may well view all distributions of corporate property, including dividends, as a quantity to be minimized; retained earnings being the item to be maximized. See O. W. Knauth, *Managerial Enterprise* (New York: W. W. Norton & Co., 1948), Chapter 9. See also George J. Stabuus, "Payments for the Use of Capital and the Matching Process," ACCOUNTING REVIEW, January, 1952, p. 105. "Management would prefer to retain for corporate use as much of the revenue as possible. The maximization of retained earnings is their goal," (p. 107).

[39] Stephen Enke has recently expounded this view: "It is the contention of this paper that it is quite unreasonable to suppose that each firm acts to maximize profits. It is also that, in the face of future uncertainty, the profit maximizing motive does not provide the entrepreneur with a single and unequivocal criterion for selecting one policy from among alternatives open to him." "On Maximizing Profits," *American Economic Review*, Vol. 51 (September, 1951), p. 567. Enke's position is based upon the proposition that uncertainty of results creates a probability distribution of the magnitude of gain to be realized from any action being considered and that frequency distributions yielding different average profit expectations may be preferred for their shape rather than the absolute size of the expected gain; i.e., the possibility of a large gain or loss may be rejected in favor of an alternative action which promises a smaller average possible gain, but one which is more certain of realization.

expectations.[40] Some proponents of the view that the concept of ex-post business income should be shaped in such a way as to exert a desired influence on such decisions appear to argue that since the desired policy is to stimulate investment, reduce prices, and increase dividends in periods of depression, and to check over-expansion in periods of boom, therefore any device which will maximize reported income during the former period and minimize it during the latter is desirable on these grounds.[41] If it is granted that this is desirable social policy, and that business decisions in these three areas are influenced significantly by ex-post income data, this argument is at least plausible.

The danger of reasoning from an observed correlation to the assumption of a causal relationship, however, is well known. Economic reasoning tells us that decisions with respect to price should be made on the basis of certain assumptions with respect to the probable demand function, an estimate of the effect on future prices induced by present pricing policy, information concerning variable costs, together with a knowledge of competitors, price and probable reaction to any given price action. The use of present cost data as a springboard from which future costs may be estimated, and some knowledge of the shape of the cost function with respect to variations in volume are essential elements on which to base this decision, but it is difficult to see how, except on some vague psychological basis, prior period's business income is directly relevant.

Similarly, business investment decisions are determined by such factors as the supply of funds available to the concern, including the possibility of external financing and the advisability of doing so in terms of long range financial policy, and some estimate of the marginal efficiency of capital. To the extent that periods of prosperity carry with them the ability to charge higher prices, and the inducement to expand investment through expectations of immediate high net receipts, these factors alone would seem sufficient to explain the tendency toward "over investment" during the boom phase of the trade cycle. On the other hand unfavorable expectations with respect to prices and immediate prospects of future net receipts engendered during periods of depression seem sufficient to account on logical grounds for the lack of incentive to additional investment during that period. To argue that ex-post business income, which is irrelevant information, constitutes a significant factor in influencing these decisions, when the truly relevant information leads inevitably to and thus acts to explain the same decisions, attributes a greater naivete to business management than seems warranted.

Any ex-post concept of income suitable for corporate reporting is not likely to be more than a starting point from which to develop further information based on expectations of the future. Furthermore there is no reason why management should be inhibited in this respect by the limitations inherent in reports prepared for outsiders. The accounting data developed for use in guiding managerial actions is internal information, developed at management's direction for management's use. No responsibility for the reliability of such

[40] Graham points out that any business decision is essentially a choice between alternatives; a decision which rests on questions of timing and the results to be obtained. In making a choice between two such alternatives, the differences between the two should be isolated; factors which are common to each can safely be ignored. "The past—all of it—is common to all alternatives and can therefore be disregarded in making the decision, except, of course, as facts about the past throw light on the present and probable future." Willard J. Graham, "The Effect of Changing Price Levels Upon the Determination, Reporting and Interpretation of Income," ACCOUNTING REVIEW, January, 1949, p. 18.

[41] See K. Lacey, "Profit Measurement and the Trade Cycle," *The Economic Journal*, December, 1947, p. 456.

data is implicit in its calculation. Management is responsible for results, but not for unpublished estimates of what future results may be. Thus ex-ante estimates of income are an inherent feature of forecasting and budgeting, and information not contained in the normal accounting records may be developed statistically from the raw materials of the accounting process. In developing such information expectations, no matter how subjective or unverifiable, may be freely incorporated in the computation, since the persons using the information are identical with those whose expectations shape the assumptions on which it is based.

Such considerations lend considerable weight to the proposition that managerial requirements are of secondary importance in formulating a concept of business income for use in corporate reports.

Business income as one element of a historical progress report to outsiders:

Admittedly the thesis that these five major and important uses of business information should be excluded from primary consideration in formulating a business income concept for corporate reporting implies that the objectives of such a calculation will be limited. Such a limitation is essential, however, if an attempt is to be made to cast this aspect of business reporting in the mould of a single income concept.

One of the basic purposes of furnishing information with respect to corporate activities to parties other than those directly concerned with the management and operation of the business is to provide them with some statistical evidence of the economic progress attained by the corporation as a form of organized productive activity. The view that corporate income is some measure of the amount of resources which the corporation might distribute and remain (in some sense) as well off is related to this purpose, not because such a distribution is contemplated or even inherently desirable, but because this expresses in general terms the notion of income as an indicator of the economic power which has come into existence and under corporate control during the period without diminution of the source of such earnings.

Such information is useful to present stockholders to the extent that it gives them some indication of the safety and productivity of their investment, the present and near future prospects for dividends, and the efficiency with which the enterprise has been managed. For those who hold a continuing interest in the firm it may be considered a report of stewardship.[42] We need not be so naive as to assume that in all or even a majority of cases such information forms the basis for expressing approval or disapproval of managerial policies by taking steps to influence such policies or to effectuate a change in personnel.[43] In a large number of instances the only practical means by which the shareholder may take action on the basis of his approval or disapproval of corporate operating results is by increasing, decreasing, or continuing his present shareholdings. Periodic reports of business income thus constitute one source of information in determining which course he shall pursue.

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[42] "All of the major uses of accounting are important, but if any of them were to be deemed more important than the others it would surely still be the one which gave accounting its genesis—stewardship." William Blackie, "What Is Accounting For—Now?", *1948 Conference Proceedings*, National Association of Cost Accountants, p. 27.

[43] The exercise of control over management through voting rights is a prerogative of the stockholder which often is not exercised effectively, in part because of the expense and effort involved in taking such action and in part because of the insignificance of any given shareholder's relative interest and the general willingness of a majority of stockholders to grant managerial proxy requests.

As an outgrowth of the wide distribution of corporate shares and the success attained in establishing markets in which such shares are freely traded, the participation in the large corporation represented by an ownership of its stock is a relatively mobile one.[44] It is only natural therefore that current and prospective investors should be interested in a comparison of the value of an interest in the firm with its market price. The old truth that prospective earning power is the basic source of value has been rediscovered several times in the last century, with a concomitant emphasis on periodic income per share and a growing tendency to express the value of shares as a multiple thereof.[45] The worth of a share in the corporate residual estate is dependent, however, more heavily and directly upon what happens in the future than on what has taken place in the past. For both present and potential investors ex-post business income can form no more than a starting point from which to base estimates of future prospects.

This limitation which is inherent in any concept of business income deserves more emphasis. One means of emphasis would be to divide corporate annual reports into two definite sections. One part could then take on the flavor of a prospectus, in which an effort was made to present estimates, opinions, and statistical information which would aid readers in forming an intelligent opinion about the company's prospects for the future. The other part would contain a historical record of the company's progress over the past 10–15 years, including an income statement for the current year. In such a setting periodic business income would be placed in its proper perspective.

Income viewed as one element of a historical progress report serves a variety of interests in addition to those of present and potential stockholders. Creditors whose stake in the enterprise runs over several periods have an interest in the welfare and stability of the firm which is closely related to that of the stockholder, despite the fact that their essential interests are adverse.[46]

Employees of the enterprise are interested in income as an indication of the strength of the organization. Since mobility (except in the higher executive brackets) decreases sharply with advancing age, a commitment to employment with a firm which extends into middle age and beyond is in a very real sense an important investment in the success of the firm and its continued capacity to provide employ-

[44] "Although business corporations are chartered for long periods, even perpetuity, few of their stockholders think of themselves as unretrievably committing their funds for the life of the enterprise. They look to the market to supply a means of recovering their capital if a change in the prospects of the enterprise or in their personal circumstances makes this seem desirable." Lawrence H. Seltzer, *The Nature and Tax Treatment of Capital Gains and Losses,* (New York: National Bureau of Economic Research, 1951).

[45] A recent survey indicated that stockholders were primarily concerned with the reported earnings and dividends during the period under review. This was as true of the financial analysts and large investors, as of the general stockholders; although the former two groups expressed a much greater interest in knowing the details behind the reported income figure, and the bases on which it was computed. "What Information People Want About Policies and Financial Condition of Corporations," Controllership Foundation, 1948. With respect to general stockholders, the authors of the survey commented, "These stockholders want to know about the earnings of the corporation they own stock in and they would like to have someone give them an appraisal of the company's financial strength and soundness; these two, when added together, amount to a lively interest in the safety and productivity of their investment. But when it comes to reading financial tables and forming their own conclusions about the soundness and prosperity of the companies they own stock in, the typical stockholder loses interest. He is so oppressed by the complexity of financial data and frightened by what seems to him the incomprehensibility of accounting language." *Ibid.*, p. 11.

[46] True short term creditors may have no major interest in income at all, but such interests may be exceptions rather than the rule. Many short term trade creditors and loan agencies have what is essentially a long term interest in the firm which is subject to recontracting at short intervals. Income as an indication of the strength of the concern is a better guide to such credit than temporary liquidity.

ment. The recent trend toward company-supported pension plans merely serves to strenghten this view.

Management also is concerned with business income from this viewpoint. It may be used directly by them in checking their plans against accomplishments. They are obviously interested in any measure which will inevitably be used as an index of their competence.

The common denominator which unites these interests is the desire for information as to the past performance of the corporation. The primary viewpoint to be served in corporate reports, however, remains that of the present or potential owner of an interest in the net estate of the corporation.

SUMMARY

This article has attempted to establish the position that the significance of business income for corporate reporting lies primarily in its usefulness as a measure of corporate performance in diverting a stream of resources from the economy, and that it should be developed primarily to serve this function. It has been shown that concepts of income which will best serve as a tax base, as a factor in rate regulation, as an element of national income estimates, and as a basis for managerial decisions are all dependent upon specialized and divergent factors which are related to a variety of objectives. Each of these uses constitutes a special purpose problem by itself.

As was suggested at the beginning of the discussion, an acceptance of this thesis is merely a prelude to the major work of deciding upon the business income concept and the means of measuring income so conceived which will best serve this basic need. The prelude in this case, however, should not be written after the major score is completed. Until an area of agreement is reached as to the purpose to be served by the measurement of business income the discussion of the business income problem proceeds in a vacuum.

APPLICATION OF STATISTICAL SAMPLING TECHNIQUES TO LIFO INVENTORY VALUATION[1]

BARRY M. ROWLES

THE PRIMARY OBJECTIVE of the program described in this paper is to produce, through statistical sampling methods, accurate estimates of current physical inventories valued in terms of base year costs. These estimates may be used either directly in Lifo inventory computations, or they may be used to substantiate or to control base year cost inventory valuations. Other objectives, mentioned at the end of this paper, will not be discussed unless they relate directly to the inventory valuation program.

In spite of the many controversies which have flared around Lifo inventory valuation during the past decade, one important phase has received comparatively little attention from users or their public accountants. The underlying principle of Lifo, valuing inventory on a base cost system for book and tax purposes, has been largely dependent upon indexes relating current to base year costs. In many cases these index methods of valuing inventory at base year costs (including total count techniques) are unnecessarily expensive. What is more important, they are frequently used, whatever their source, without explicit consideration of their accuracy or the consequences of inaccuracy. They are extremely critical in the Lifo computations, since if they contain even small amounts of error or bias the Lifo elector's income and tax figures can be significantly distorted.

The Internal Revenue Service's stated policy concerning Lifo price indexes in relation to retail accounting is this:[2]

> "Any price indices must be based upon sound statistical principles of construction and upon adequate records to be kept available for examination by the Bureau . . . indices may be prepared by an individual taxpayer based upon his own data on prices and inventory quantities, if adequate, and if proof is submitted that sound statistical methods have been employed that assure reliable indices, not only for the particular year in question, but for subsequent years."

In actual practice these indexes are usually obtained either from a Lifo user's own inventory data, using total count pricing procedures, or from a published price index series such as those compiled by the U. S. Bureau of Labor Statistics. These sources may or may not conform to the foregoing statement of policy, depending upon the I.R.S.'s definition of "sound statistical methods" and "adequate" data on prices and inventory quantities. Under certain conditions, which very frequently exist, however, these sources will produce indexes containing various types and degrees of error. Furthermore, these errors can be of sufficient magnitude to disqualify the indexes under professional statistical and accounting standards vigorously applied.

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[1] The author is indebted to D. Rosenblatt of American University and to W. W. Cooper of Carnegie Institute of Technology for their instruction and guidance while consultants to this program. R. M. Trueblood and R. W. Johnson of the firm of Touche, Niven, Bailey & Smart actively participated in the program's inception and development.

This paper was presented informally at the Conference on Modern Statistical Methods in Business and Industry, Carnegie Institute of Technology, on May 1, 1953. It has been incorporated as one of the case studies in a paper, "The Use of Statistics in Accounting Control," given by R. M. Trueblood at the 1953 NACA annual meeting in Los Angeles.

[2] Mimeograph 6244 (I. R. Cum. Bull. 1948-1), referring to the use of Lifo by taxpayers using the retail inventory method.

The possible errors contained in indexes computed on the basis of data from the total economy stem from two factors. One, an index computed from total industry data may not properly reflect either the price level or inventory mix of any given member of the industry. Even if the national index were extremely accurate it should not be used without some assurance that it is within a defined range of what the user's actual Lifo price index would be if it were computed. This point is equally valid in the cases where national indexes have been computed specifically for Lifo computation purposes.[8]

The second possible source of error in national indexes lies in the statistical methods generally used to obtain them. It is difficult, if not impossible, to objectively evaluate the degree of control of bias and error in these indexes, because of the lack of published evidence and accompanying measurements.

Internally computed Lifo price indexes present problems of their own, particularly when the inventory on Lifo is large, heterogeneous, and its mix fluctuates over time. If total count pricing procedures are used the indexes are theoretically free from error and completely satisfactory. In actuality pricing or computing errors may exist in the indexes because of the sheer size of the inventory, the appearance of new items, lack of base year cost data, lack of capable personnel, or the usual year-end time restrictions. The pricing error effect could be magnified over time, and could be cumulative.

If internally computed Lifo price indexes are built up on a cumulative chain basis, the possibility of product mix bias exists. This bias occurs because of shifts in the mix of an inventory containing elements with different current-to-base cost ratios. The bias can be in either direction and can reverse itself, so that the chain indexes can be either higher or lower than the true Lifo price index would be at any given time. However, because the mix shifts which cause the bias are frequently consistent in nature and direction over a period of several years, the bias effect may become increasingly pronounced.

For the foregoing reasons it is as unwise as it is illogical to assume that either national indexes or internally computed indexes are completely accurate. Therefore, an effort should be made to measure and control the amount of error involved. This point becomes reinforced when it is realized that the use of modern statistical methods may yield improved quality and increased control at reduced cost when compared to other methods. Traditionalism does not provide adequate justification for the continued use of these other methods when a more satisfactory alternative is available.

These considerations underlie the statistical installation discussed in this paper. The company concerned is a large manufacturer and supplier of various types of machinery and equipment. A section of its inventory valued at over seventeen million dollars in current costs, and including about 250,000 items in over 100 different locations, was covered by the program. This inventory has been valued on a Lifo basis for book and tax purposes for several years.

CONCLUSIONS

In summary it can be said that it has been substantiated, on the basis of this first attempt, that the objections to present methods of valuing inventory in base costs can be effectively overcome through sampling techniques. In addition several inventory control methods are made pos-

[8] For an excellent example of how a particular Lifo user's indexes can deviate from indexes computed on a national scale, see Hutzler Bros. Co., 8 Tax Court 14 (1947).

sible that would otherwise be difficult to obtain.

Carried out at the company level, the sampling is performed on the actual inventory for which a base cost valuation estimate is desired. Thus, the problems encountered in national indexes are eliminated from consideration.

The problems of internally computed indexes are difficult, but also surmountable. Base pricing difficulties, including errors, can be attacked once the amount of the base pricing is reduced by sampling methods. In this program, for example, a sub-sampling system was set up to check the quality of the base prices being used on the sample elements, and the extent of clerical error in the calculation. In this fashion error control and correction factors were obtained for application as desired. Initially, the base pricing involved in the sampling program covered about 25% of the items included in the usual total count amount. By refinement of the procedures this figure has been reduced to about 4% for future inventory sampling purposes.

Calculation and control of sampling and other errors is undertaken, and it follows that estimates can be made as precise and reliable as desired. A method of balancing costs and benefits is thus provided as a basis for rational decisions by both the firm and the tax authorities. This will provide indexes which can be audited in two senses: The clerical computations can be repeated and the same results obtained, and the procedures can be followed to the point of drawing a new and independent sample and computing another index, which will fall, with a stated probability, within a given range of the true Lifo index.

Where chain indexes are used the constant possibility of bias due to product mix variations can be watched and existing bias determined and controlled.

By a slight extension, such a sampling program offers the user important collateral advantages. He can accurately and economically compute Lifo inventory valuation at interim points, e.g. quarterly, during each year. For a large complex inventory such calculations may not be feasible or economical under total count base pricing, or chain index methods. Such valuations are important for resolving questions of voluntary and involuntary liquidations prior to the year-end, as well as for many other accounting and management purposes.

ACCOUNTING CONSIDERATIONS

Company terminology which will be used in describing the program is defined as follows:

Product Class.—A homogeneous group of items; the basic classification in the inventory accounting system. The inventory covered in this study contained over thirty product classes. Each product class may contain up to 3,500 items, and theoretically each item can appear in each of over 100 branches.

Branch.—A sales outlet holding inventory composed of various items. No single branch in the company would stock all of the items in any one product class at any one time.

The Lifo price index which was taken as the standard of comparison in this program is defined as:

1. An index which relates the user's current physical inventory valued in terms of current costs to the same inventory valued in terms of base year costs; that is, a pure price index with the same current quantity weights used in the denominator and in the numerator;
2. An index free from pricing, clerical, or other errors.

This index would be the most desirable for use in the index method of Lifo valuation because of its accuracy and its strict conformation with Lifo inventory ac-

counting principles, but it is frequently difficult to obtain in practice. National indexes and internally computed chain indexes are often regarded as administratively convenient approximations of it. Although the I.R.S. is becoming more liberal in its attitude toward Lifo, as time passes, this same passing of time from "base year" increases the probability of significant error in the above approximation methods. This error may have serious tax implications and should be measured and controlled. Once a case of inadequate base valuation computing techniques has set in, with or without the complication of increasingly inaccurate base prices, retroactive correction can be difficult even if legally possible.

The general question of the acceptability of such a sampling program to the I.R.S. will undoubtedly and properly be raised. As yet this question cannot be positively answered, but the statement of I.R.S. policy for department store Lifo indexes given previously is concise.

It seems reasonable to assume that Lifo indexes used by firms not on the retail inventory method should also qualify under that policy statement. In any event, a sound statistical approach to the Lifo inventory problem could not logically be rejected. Such an approach provides consistent index accuracy over time, without danger of cumulative bias, through the measuring and control of clerical, costing, and sampling errors.

STATISTICAL CONSIDERATIONS

This section of the paper is concerned with details of the program's installation, with particular attention directed to the statistical techniques used. Data from the program will be used for examples wherever possible, consistent with space limitations and the degree of generality intended. In all cases details of formulae derivations have been omitted, but it is hoped that no loss of significance will result since most of the statistical techniques are contained in generally-available literature.

Considerations Prior to Beginning Sampling Experimentation

Before beginning to consider sample designs it was essential to establish a solid foundation upon which the program could be built. Initial attention was devoted to the precision[4] required in the estimates that would be derived from the sampling program, considering the effect of error in these estimates upon the resulting Lifo inventory valuation. Actually this precision determination evolved, subject to change, as cost and error considerations were more thoroughly explored with program progress. Because of possible transmission of errors to other accounts it is unwise to freeze such a decision on a once-and-for-all basis in any accounting program.

The initial phase of this program was concerned with a single section of the inventory, comprising about eleven million dollars at Lifo valuation. After consideration of the various factors involved, the desired precision of the over-all estimate of the inventory valued in base year costs was set at about 1% with a reliability[5] of 95%. The underlying structure of the inventory was such that to achieve this precision in the over-all estimate it was apparently necessary to design for a precision of 4% at the product class level (product classes were considered to be strata[6] within the inventory universe).

The next step was the layout of the universe "frame,"[7] from records and re-

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[4] For a simple definition, see R. M. Trueblood, *op. cit.* For a more explicit definition, see E. L. Kohler, *A Dictionary for Accountants*, New York: Prentice-Hall (1952).

[5] *Ibid.*

[6] See E. L. Kohler, *op. cit.*

[7] *Ibid.*

ports as they existed at the most recent physical inventory date. Wherever possible the frame was laid out in terms of the basic inventory units: the items within product classes. This frame was set up primarily for sampling experimentation; as a general principle such an experimental frame should allow access to the smallest units obtainable, since combination of units into larger aggregates may reduce the number of alternate statistical methods that might be explored. Such a reduction of alternatives may force the temporary use of needlessly inefficient methods until further detail can be acquired by sampling methods or otherwise.

The distribution of inventory dollar value at the item level, across different product classes, and across different stores was examined at this point, preparatory to beginning experimentation. The frame provided the data to which a standard statistical technique known as the analysis of variance was applied. Marked skewness was found in the distribution of dollar value at the first three levels of aggregation: (1) the distribution among items from the inventory in one product class held in one branch; (2) the distribution among branch inventory totals in each product class; (3) the distribution among entire branch totals or among entire product class totals. The coefficient of variation[8]—the ratio of the standard deviation to the mean—was consistently high at each of the above levels, ranging from about 1.0 to 1.7.

Since much of the information obtained during this phase of the program was to be used in sample design and size computations later on, universe variances and means were obtained wherever feasible rather than sample estimates of them. It became increasingly obvious during these investigations that the program would require adaptation and development of existing statistical methods.

As a final step in this initial investigation a group of several product classes (strata) was selected which had distribution and variance characteristics that were representative of the total inventory. Various sample designs were tested on these product classes, which represented about 25% of the total inventory for which a base cost valuation estimate was desired.

General Sampling Approach

Various methods of sample estimation could have been used in connection with the sample designs considered. These ranged from regression estimates (least squares) to ratio estimates, where the ratios were composed of current and base year cost valuations. Each method had advantages and disadvantages. Regression estimates, for example, are at least as efficient as ratio estimates[9] but are more cumbersome. The ratio estimate was selected as the preferred approach for three reasons: (1) the form of the ratio estimate is identical to that of the Lifo price indexes historically used, which has definite psychological advantages; (2) the superior efficiency of the regression estimate effectively disappears when the regression line nearly passes through the origin, which it does in this case; and (3) the ratio estimate is easier to compute.

Sampling Experimentation

After the selection of an area of the inventory for sample design experimentation a variety of sample designs were applied, samples drawn, estimates formed and errors of these estimates ascertained. Current cost inventory data were used for this experimentation, rather than base year cost data. This provided an additional

[8] *Ibid.*

[9] See pp. 148–149, W. G. Cochran, *Sampling Techniques*, New York, John Wiley & Sons (1953).

margin of safety, since it was verified that the inventory generally exhibited higher variance in current cost terms. This resulted from the fact that the characteristic price movements since the base year have been upward at varying rates for different items. Therefore, any sample size determinations made on the basis of current cost valuation variances would be more than adequate for use on base cost data.

The following comparisons were made between the various designs:

1. Efficiency, defined as sample size necessary to obtain an estimate of the current cost valuation of each product class with a precision of 4% at 95% reliability.
2. Stability over time, measured by the precision of estimates when the same sampling plans were applied to inventory data over a period of years.
3. Administrative difficulty of computing errors of estimates, considering time and type of personnel required if the computations were to be done on a monthly basis.
4. Flexibility of the designs, as indicated by the ease with which the resulting samples could be supplemented or the extent to which the designs could be efficiently applied to related areas of analysis such as sales data. Because of time limitations this flexibility had to be determined primarily through judgment rather than through computations, except for a few applications of designs to sales data.

As a result of this experimentation it was determined that unrestricted random sampling[10] and systematic sampling[11] were inefficient. Various methods of stratified random sampling were definitely better, but these still resulted in up to 50% samples to obtain the precision and reliability desired.

The sample design ultimately selected was developed specifically for the program,[12] and was essentially a non-independent stratified sample. Previous inventory data, branch inventory totals within each product class, were ranked and stratified; the strata were then placed side-by-side, forming clusters of branch-by-product class totals. An unrestricted random sample of these clusters was drawn from each product class. This design is characterized by relatively high efficiency, stability, ease of computations for sample size determination and later estimates, and the possibility of simple supplementations.

Sample Selection

The determination of total sample size in a survey to be run in coordination with a regular accounting function such as inventory-taking involves careful consideration of the timing of related operations, in addition to the purely statistical aspects such as variances and cost factors. A total sample size of 25% of the items in the inventory was determined to be necessary on the basis of the above considerations and computations. This was larger than desired, primarily because aggregative inventory units had to be selected initially. After the initial sampling was completed it was possible to reduce the total sample size to 4% of the items in the inventory. This sample size is expected to be sufficient for future surveys.

The 25% sample was drawn and priced in terms of both current and base year costs via the regular inventory pricing procedure, but with special priorities to speed the return of the information.

Other Features of the Program

In this program certain special sample designs were set up to run concurrently with the regular survey, covering inventory areas of particular interest; this included areas exhibiting historic instability, or those for which certain hypotheses were to be tested, e.g. similarity of price movement in comparison with the total inventory.

To determine the extent of base costing

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[10] See E. L. Kohler, *op. cit.*
[11] *Ibid.*
[12] This design was conceived and developed by D. Rosenblatt.

error in the total sample, a sub-sample was drawn systematically (for administrative convenience) and for this sub-sample the base costs were independently checked. By this device correction factors were obtained which, if significant, could have been applied to the final estimate of the base cost valuation. Alternatively, the check could have been used as a quality control method, since portions of the inventory sample with a high probability of possessing base costing errors, in excess of some predetermined level, could have been rejected and base costed again.

As a test, and to meet time limitations, one section of the sample was base costed by using regression formulae[13] computed from base and current cost information already received for similar material. Provision was made to verify these estimated base costs by actually performing the costing on a sub-sampling basis at a later date.

Results of the Sample Survey

The final computations of sample estimates for the total inventory covered by this program were:

1. Estimate of current cost valuation derived from sample data = \$17,567,000
   Precision of above estimate at 95% reliability = .96 of 1%
2. Estimate of base year cost valuation derived from sample data = \$11,072,000
   Precision of above estimate at 95% reliability = .98 of 1%
3. Ratio, or index of current-to-base valuations =

$$\frac{\$17{,}567{,}000}{\$11{,}072{,}000} = 158.66\%$$

   Precision of above index at 95% reliability = .253 of 1%
4. Although the estimate of base year cost valuation in 2 could be used directly in the Lifo calculations, it is possible to improve upon this estimate. If the index in 3 is divided into the actual total current cost valuation, obtained from the year-end physical inventory, the resulting figure is a better estimate of the base year cost valuation. This estimate will have the same precision and reliability as the index, or:
   Ratio or index estimate of base year cost valuation =

$$\$17{,}672{,}000 \div 158.66\% = \$11{,}138{,}000$$

   Precision of above estimate at 95% reliability = .253 of 1%, which is an increase in precision of .727% with the same reliability.

With the initial survey completed and the total sample size for future surveys reduced by sub-sampling, the usual "mopping-up" operations are completed at this writing. Permanent reporting, recording, and computation systems have been established to keep the program on a continuing basis, which includes monthly indexes of inventory cost.

Provision has been made for redesign and supplementation of the program's sampling plans, as necessary, to keep them consistently reliable. This will assure the future integrity of the program, which is to be used as a springboard to other fruitful areas for statistical sampling. Inventory control as well as inventory valuation, sales and cost analyses and predictions offer inviting prospects which are now being explored.

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[13] See A. Wald, "The Fitting of Straight Lines if Both Variables are Subject to Error," *Annals of Mathematical Statistics* XI, 3, September, 1940.

A BIBLIOGRAPHY ON THE APPLICATION OF STATISTICAL METHODS TO ACCOUNTING AND AUDITING

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Touche, Niven, Bailey & Smart

THIS BIBLIOGRAPHY was prepared in connection with a broad study of the application of statistical techniques to accounting and auditing problems being carried on at the Graduate School of Industrial Administration, Carnegie Institute of Technology.

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MEASUREMENT OF REAL ECONOMIC EARNINGS OF A MACHINERY MANUFACTURER

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MANUFACTURERS' REAL EARNINGS are seriously overstated by conventional financial reports in a period of inflation such as we have gone through and still face. This overstatement by conventional accounting reports creates an illusion of higher company earnings than actually exist, and thus may distort top management's decisions on vital policies. The accounting profession has become increasingly aware of this problem. Its leaders are actively seeking solutions.

The purpose of this paper is to illustrate by means of a case study (1) the impact of inflation in distorting the financial results of a manufacturer of equipment; (2) the kinds of management decisions for which the resulting disparity between book earnings and real economic earnings is important; (3) the meaning of real economic earnings; and (4) principles and methods of measuring real earnings by one tested method.

I. FINANCIAL RESULTS DISTORT ECONOMIC REALITY

Conventional accounting seriously overstates a manufacturing company's earnings during an inflationary period when prices rise drastically. We all recognize that in a period of inflation our personal cost of living goes up. It is obvious that a company's cost of operations also goes up, that the cost of replacing worn equipment goes up, and that the cost of expanding capacity goes up. Yet accounting procedures generally fail to take adequate account of these increases in the corporate cost of living. Orthodox accounting vigilantly keeps price-level revaluations from getting into the profit and loss account by ignoring them or by treating them as surplus adjustments. But when revaluations find their way into the accounts indirectly, by the process of turnover of assets during inflation, they do get into the earnings account. These "inflation profits" that result from such revaluations are treated as ordinary income and cannot in the books be distinguished from regular income during the life of the asset, and before the time of its replacement at higher price levels. Hence accounting profit overstates real earnings.

When plant and equipment are important, as in machinery manufacturing, conventional accounting analysis becomes an unreliable tool for managerial policy. "Inflation profits" make book earnings seriously overstate real economic earnings. Moreover, these illusory profits will continue to exaggerate real profits long after the price levels have become stabilized. It took twenty years after World War I before prices underlying depreciation charges caught up with current replacement costs. For sound managerial use of business accounts it is desirable that top management know how big this inflation distortion has been.

II. MANAGERIAL USES OF REAL EARNINGS

Among the more important practical applications of estimates of a company's real economic earnings to top management policies are: (1) dividend policy; (2) capi-

tal budgeting; (3) pricing policies; (4) appropriations for advertising; and (5) government negotiations.

Dividend Policy

Perhaps the most important single use of the real earnings study lies in its implications with regard to dividend policy. Cash dividend payments may be far less than reported book earnings and still be in excess of the maximum consistent with the maintenance of the real capital of the corporation. This was the situation of the firm studied here, which we shall refer to as "Machinery, Inc." The data are examined in a later section. Maintaining a record of real earnings may serve a twofold purpose in this respect:

(1) as a guide to the determination of dividend policy; and
(2) as a device for explaining to stockholders the reasons for what may seem to them to be excessive retention of earnings.

Many companies in such a period pay out dividends that are not earned in a real economic sense. This is legal, and quite inadvertent. It is the function of real earnings analysis to provide management with estimates that will prevent this kind of impairment of the company's real assets through ignorance.

Capital Budgeting

Concepts and measurements of real earnings outlined here have great practical usefulness in plough-back decisions and in estimates of the profitability of future investment. They also have a vital bearing on the choice of sources of outside capital—notably, on borrowing versus equity capital, and lease-back versus conventional financing. Knowledge of the firm's real rate of return, coupled with data on the cost of various types of investment capital, can be of real assistance in considering expansion or change in capital structure.

Pricing Policies

A more informed approach to price policy may also stem from an analysis of the real earnings series. Prices set on the basis of book costs will be inadequate to provide for the long-run maintenance of real investment. Provided that competitive conditions permit, a knowledge of the firm's real rate of return may encourage the firm to set prices which are adequate to produce a normal return on the real investment. Only those firms which have recognized this, either explicitly by analysis of their real earnings or implicitly by intuition, have set prices in the postwar period which have been designed to secure their prewar rates of return in real terms.

Insofar as costs and profits and return on investment have a bearing on setting prices, these should be real costs and real investment, rather than those measured conventionally in a hodge-podge of dollars of different purchasing power.

Appropriations for Advertising

One way to decide on the size of the advertising budget is for the company to spend all it can afford. This all-you-can-afford method has been used with signal success by some new enterprises, and it has been an important factor in deciding on advertising appropriations for established enterprises. The essence of this criterion is what the company has earned in the past. And the earnings that are relevant for this purpose are after-tax real economic earnings.

Negotiations with Governmental Agencies

The company's profits are a pivotal consideration in negotiations with agencies such as OPS, and in antitrust, military price negotiation, public utility rate regulation, and in wage negotiations. In the

arena of negotiation, concern about the reasonableness of a corporation's earnings is vital, so when there is discretionary latitude and open-mindedness about the basic economic purpose of government control, measurements of real earnings can be helpful to both parties.

Summary

In a period of rising prices, reported earnings overstate the real increments to the value of the firm's assets stemming from operations. Book earnings can be deflated and real earnings estimated by applying principles of economic and statistical analysis. Knowledge of real earnings and real rate of return can have great practical value, not only for management decisions on various operating and financial policies, but also in the education of stockholders, governmental agencies and the general public.

III. THE MEANING OF REAL ECONOMIC EARNINGS

Business income ought to be measured in terms of the real goods that can be purchased with it. *No business may be said to have earned a profit if at the end of the accounting period the value of its total assets (plus the current purchasing power equivalent of dividends paid) is the same as the value of its total assets at the beginning of the period.* Strictly speaking, it is the earning power of the assets that must be maintained before economic earnings may be said to exist. However, earning power is essentially a speculation about future demand, technology, competition, and management ability, and thus involves a number of intangible considerations that rest entirely upon judgment. In practice the only feasible way to measure maintenance of capital value appears to be in terms of physical capital—inventories, equipment, and purchasing power.

Real income may be defined, roughly, as the increase in the value of the firm's assets during the year plus dividends paid during that year. Reported dollar statements of income do not reflect these economic concepts accurately in periods of rapidly changing prices since accounting principles are based on the postulate of a fixed purchasing power of the dollar over time.

Deflating Book Earnings

Making adjustments for price level changes in analysing personal incomes has gained wide acceptance since the war. Wages, salaries, and the prices of personal services have all been raised to help their recipients keep up with increases in the cost of living. This is a sensible recognition that the purchasing power of a dollar of income is lower than it used to be and that more dollars are necessary for the individual to maintain the same command over goods and services that he had prior to the rise in prices.

Business firms are faced with much the same problem, but income is a more complex concept than personal income and the effects of inflation upon it are correspondingly more difficult to measure. Personal income normally takes the form of a simple inflow of money, typically for wages or salary. Business income, on the other hand, is a residual from the flow through the accounts of the costs of depreciable and non-depreciable assets acquired at different price levels and being used up at different rates. Since these assets have been acquired at different times, their accounting records, which are almost always historical costs, reflect the price fluctuations for many preceding years. Hence the book value of assets is in terms of dollars of different purchasing power, and the residual accounting income reflects a hodgepodge of big and little purchasing-power dollars.

Consequently, in measuring real income it is not enough merely to deflate the accounting income itself, as is done for per-

sonal income; instead it is necessary to restate the quantities of individual assets in terms of dollars of the same purchasing power size and recalculate the income.

Current Dollars vs. Constant Dollars

The problem of "unscrambling" the jumbled dollars in order to determine the real income of any one year should be clearly distinguished from the problem of comparing income from one year to the next. An estimate of real earnings can be stated in either current dollars (e.g., 1939 dollars for 1939 earnings and 1949 dollars for 1949 earnings) or in some constant dollar (e.g., average purchasing power for the period 1936–1939). In either case homogeneous dollars are being used for the earnings estimate for any one year. It is for comparisons among years that the two measures differ, and in order to see long-term trends in the real position of the company, earnings for the entire analysis period must be expressed in constant dollars. This has been done in the chart series for "Machinery, Inc."

Furthermore, it is not correct to compare reported earnings in current dollars with real earnings in constant dollars. The effect of using jumbled dollars in conventional accounting is illustrated correctly by comparing the deflated reported earnings with deflated real earnings. Reported earnings for "Machinery, Inc." have therefore been shown in Chart 1 in 1936–1939 dollars as well as in current dollars. For example, deflated book earnings for 1948 represent the 1936–1939 purchasing power of the dollars reported for this company in its 1948 financial statements.

BOOK EARNINGS vs. DEFLATED BOOK EARNINGS

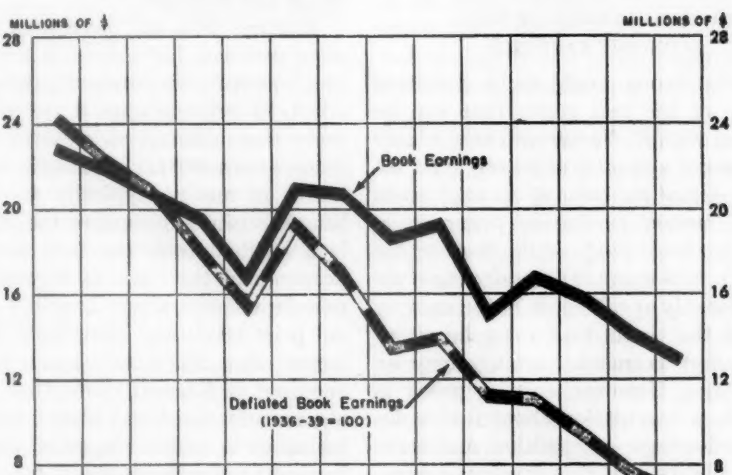

CHART 1

It should be understood that none of the above reasoning is meant to imply that existing accounting methods are either "wrong" or "right." Accounting records of historical transactions are indispensable in making any kind of an income analysis. However, the measurements of income which flow directly from the unmodified historical accounting records cannot be as appropriate and accurate for purposes of economic appraisal of income as are income statements in which values have been deflated to homogeneous dollars.

Measuring Income

The concept of real economic earnings mentioned above, dividends paid plus net growth in real capital during a year, is equivalent to the accountant's concept of book earnings. The accountant reports earnings as a total and then segregates this total into dividends paid and growth of the earned surplus account. In book earnings, as well as in real earnings analysis, the growth of surplus represents the net change in assets during the year. In real earnings analysis, however, the change in assets is stated in physical terms. In book earnings estimates, assets changes represent only the dollar transactions that have taken place in the past. The significant difference between the two lies in the ways in which the changes in the values of the assets are estimated.

IV. PRINCIPLES AND METHODS OF MEASURING REAL EARNINGS

The purpose of this section is to outline how economic, statistical, and accounting analysis is applied in measuring real income. Principles are illustrated by showing how they were applied to one company, "Machinery, Inc." Methods and real earnings results for this company are presented in a series of charts.

The keystone of the method lies in the determination of the real value of the firm's assets at the beginning and ending of each accounting period. This is done by restating the book values of assets in dollars of constant purchasing power, e.g., buildings acquired 40 years ago and inventories acquired last month are all restated at what they would cost during a single base period (in this study, 1936–1939). Depreciation allowances are then recalculated in constant dollars on the basis of these restated values.

In estimating the real value of assets, different methods are used for different kinds of property, and it is convenient to discuss each asset group separately.

Liquid Assets

When the price level rises, the purchasing power of cash and other liquid resources declines correspondingly. Thus, merely holding on to cash during an inflationary rise results in real losses through the shrinkage in the purchasing power of these liquid assets, which become inadequate at the higher price level to handle a given level of operations. To the extent that these liquid assets lose purchasing power this kind of productive facility is reduced in capacity and in economic value.

Liquid assets are a reservoir of current purchasing power and can be valued in terms of the things which they buy, primarily labor and materials. Cash and cash-equivalent items that will normally be turned into cash in the near future (i.e., current assets less inventory), are used to pay current liabilities and to pay wage bills and buy raw materials and supplies. By deflating liquid assets net of current liabilities, it is possible to eliminate the need of indices for such troublesome items as tax liabilities. Liquid assets net of current liabilities are then deflated by a specially weighted index of wage rates and material costs.

Inventory

Orthodox accounting vigilantly keeps revaluation of fixed assets from getting

into the profit and loss accounts by not recording them until they are realized in cash by sales. Inventories, however, turn over much faster than fixed assets, and inventory revaluations become an important element of the income statement in years of substantial change in the price level. These revaluation profits are treated as ordinary income on the books and are not distinguished from other incomes, even though they reflect not changes in the real value of the assets but reverse changes in the value of the dollar. When inventory accounts are restated in dollars of constant size, only change in the real volume of inventory is shown and illusory inventory profits are removed from the income statement.

It might be pointed out that the use of LIFO (last-in, first-out) inventory valuation reduces the amount of revaluation profit which is treated as ordinary income on the books but does not necessarily eliminate it. The use of LIFO accounting for inventories requires the use of a slightly different, more complicated method of deflation to arrive at real values, however, inasmuch as book values of inventories under this system are often purely nominal.

Assuming that inventories turn over about once a year, the book values would reflect an average of the year's costs, under FIFO (first-in, first-out) accounting, and would in that event be deflated to constant dollars by an annual average price index. Inventories may be grouped into relatively homogeneous categories and deflated according to the average age of the items in each category. Different index numbers

PUBLISHED PRICE INDEXES
(1936 - 39 = 100)

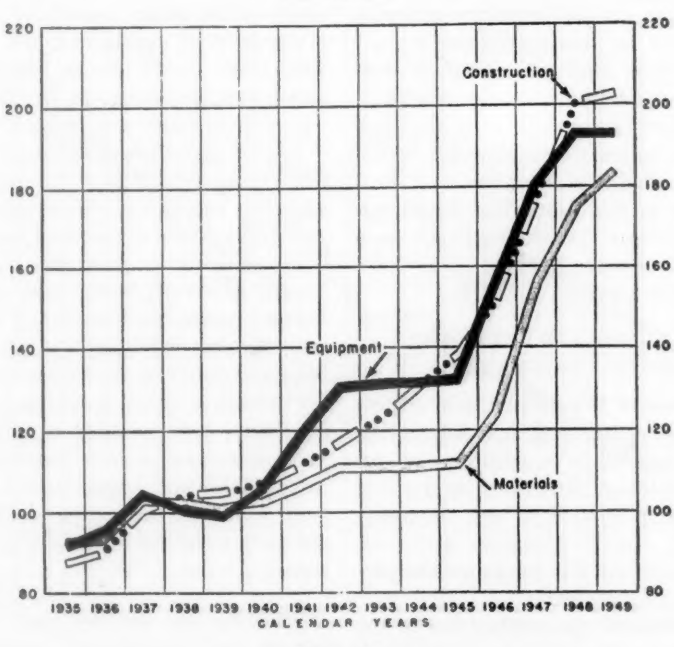

CHART 2

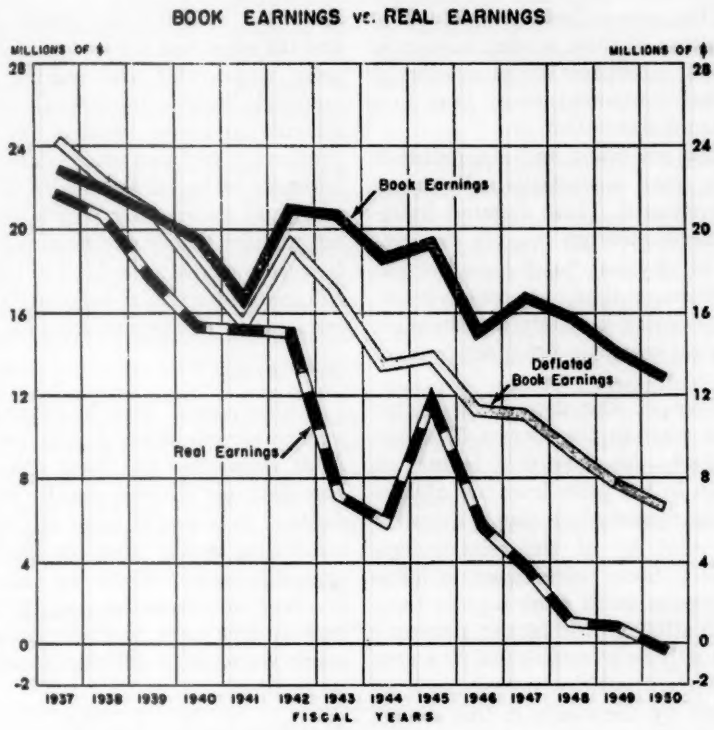

CHART 3

ought to be used to deflate inventory at different stages in the production process. These indices assign progressively more weight to labor as the product moves from the raw material stage through the in-process stage to finished inventory.

Plant and Equipment

Plant and equipment are a stock of physical goods whose balance sheet values reflect the price levels of many different years in the past. The first step in deflating these accounts is to express the opening net value of these assets in dollars of constant purchasing power. This is done in order to make the initial year's values comparable to those of later years. It is necessary to develop a special-purpose index of the prices that underlie the company's depreciation charges and net book values of fixed assets. Constructing this index is one of the more intricate problems of real earnings analysis.

The next step is to deflate *additions* to plant and equipment. New construction should be deflated by the current value of a suitable index of the cost of factory building construction. New purchases of equipment should be deflated by an appropriate index of equipment costs.

The third problem is to deflate *retirements* of plant and equipment by the price levels at their probable dates of acquisition. For this purpose special retirement indexes for different categories of assets must be worked out. These indexes reflect prices for many years past. They also should reflect mortality rates of each asset

category. The figures that are obtained by the application of these special indexes in these three steps express the gross value of all plant and equipment, every year, in a uniform size dollar.

To obtain net plant and equipment in real terms, real depreciation allowances must be computed. These deflated depreciation charges measure roughly the consumption of physical "usefulness" of the facilities through time, whereas conventional depreciation is merely an allocation of a historical cost to subsequent production.

The choice of the appropriate index numbers is vital to the success of a real earnings study. An important feature of wide swings in the price level has always been the consequent disruption of the price structure—that is, of the relationships among prices. Some prices react to inflationary pressure much more rapidly than others, and although the former structure may eventually be re-established at a new price level, the transition period (such as that covered by the charts in this study) will at any point in time see some costs much higher than others relative to their former stable levels. Some idea of this disparity of price movement is shown by the price indices plotted on Chart 2.

There are available in this country a great many price indices, published and unpublished, prepared by government agencies and by private sources, relating to general and special commodity groups at the several levels of production. In studying income in real terms it is important to choose from this host of indices the ones that are truly appropriate for the particular firm. Often none are; hence it is necessary to construct special price indicators whose movements reflect most accurately the changes in prices of the particular types of assets to which they are to be applied.

There are two general types of construction cost indices, one of which relates to the cost of one or a few specific structures and the other to a tailored mixture of company wage rates and market prices of materials. Equipment costs are notoriously difficult to gauge because the range of products is vast and innovations are rapid. Intimate technical knowledge of the company and considerable familiarity with index number theory and sources is required to select or create the kind of indices that will meet a particular company's needs for restating its equipment accounts.

Other Assets

"Other assets" may be taken to represent an accumulation of cash transactions. After estimating the total value as of a base date, net changes year by year can be deflated by a special index of current cash purchasing power used for liquid assets, since this index reflects the value of cash involved in alternative uses. If this category is very large or if the nature of the assets warrants, a different treatment will be required.

Real Earnings in Constant Dollars

By restating each category of assets in terms of dollars of constant purchasing power for each year during the period studied, it is possible to obtain an adequate measure of the real change in the company's aggregate assets from year to year during the period. To get a measure of real economic earnings annually it is necessary to make adjustments for dividends and capital transactions so that the year-ending and year-beginning real asset values will show the results before dividends paid and will not show the effects on the assets of securities sold or retired during the year. This is done by adding dividends plus security retirements minus security sales during the year (deflated by a special index of the real value of cash to the company) to the year-ending real asset value for each year. The annual differences measure the company's real earnings.

This method of getting a company's income from the year-to-year change in its net assets is not essentially different from the accountants' method of getting income. Accounting measures of income are essentially estimates of the yearly change in the company's net investment, measured in scrambled dollars. The income statement is a supporting schedule showing some of the transactions that were made to achieve the annual change in net investment. In measuring real income, we determine the real change, rather than the dollar change, in the company's net investment during each year. We have disregarded the historical accidents of what the price level happened to be at the time the various assets were acquired, and determined what income would have been reported by conventional accounting if transactions had been recorded in dollars of constant purchasing power instead of dollars of vastly varying purchasing power, as was the case.

V. FINDINGS

Next we shall examine briefly the findings for our illustrative company. The top curve in Chart 3 shows the book earnings of "Machinery, Inc." Reported earnings fell jaggedly from about $23.0 million in 1937 to a little more than $12 million in 1950. The gray curve in the middle represents the results of a simple-minded attempt to get the corporation's real earnings, that is, by taking the book earnings and dividing by a single index number as we do to estimate the real earnings of a person.

"Machinery, Inc.'s" real earnings meas-

DIVIDENDS vs. REAL EARNINGS

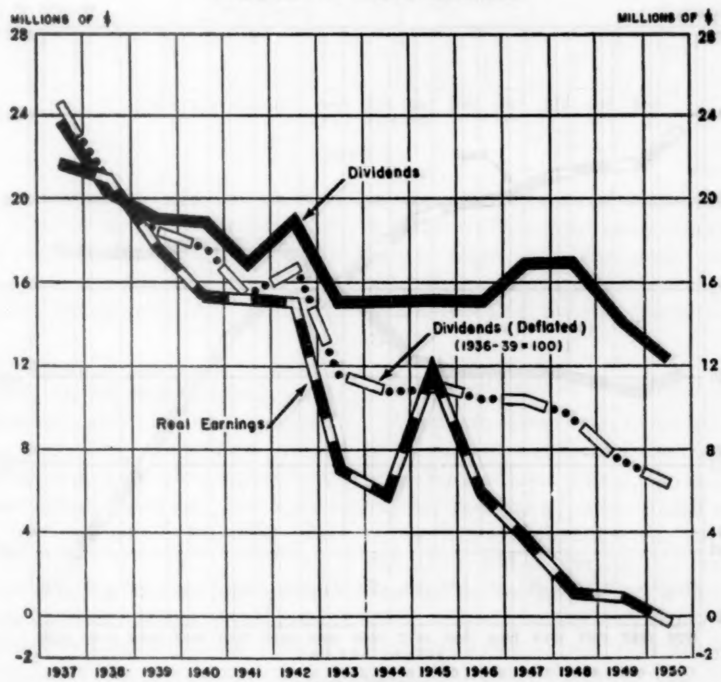

CHART 4

ured by the method outlined in the preceding sections, are charted as the broken line in Chart 3. These real economic earnings declined during the period 1937 to 1950 from around $21.0 million a year to an amount not significantly different from zero in the last two years shown.

The significance of this economic measurement is highlighted by a comparison of real earnings with dividends paid. The period from 1946 to 1950 was one in which conventional accountancy reported that this company and most companies like it earned big money. It was also a period in which dividends were niggardly as compared with these gigantic reported earnings, i.e., of big plow-backs, per books.

The black line in Chart 4 shows what "Machinery, Inc." actually paid out in dividends during this period. To keep the comparison accurate, these dividends have been restated in terms of prewar dollars and this is shown by the broken line in the middle. The black and white line at the bottom shows the company's real economic earnings stated in dollars of the same purchasing power as the deflated dividends. In every year except one "Machinery, Inc." dipped into its real capital by paying out in dividends more than it took in in real earnings. The peril of making managerial decisions on dividend policy and capital expenditure plowback policy without this kind of information is clear.

Rate of return estimates should be computed in terms that have real economic meaning for policy decisions. In order to

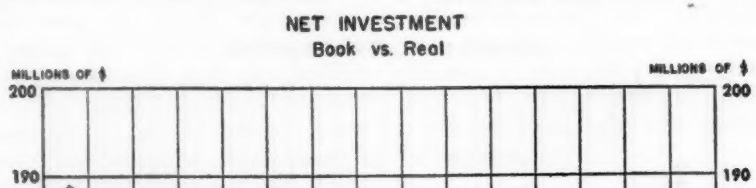

CHART 5

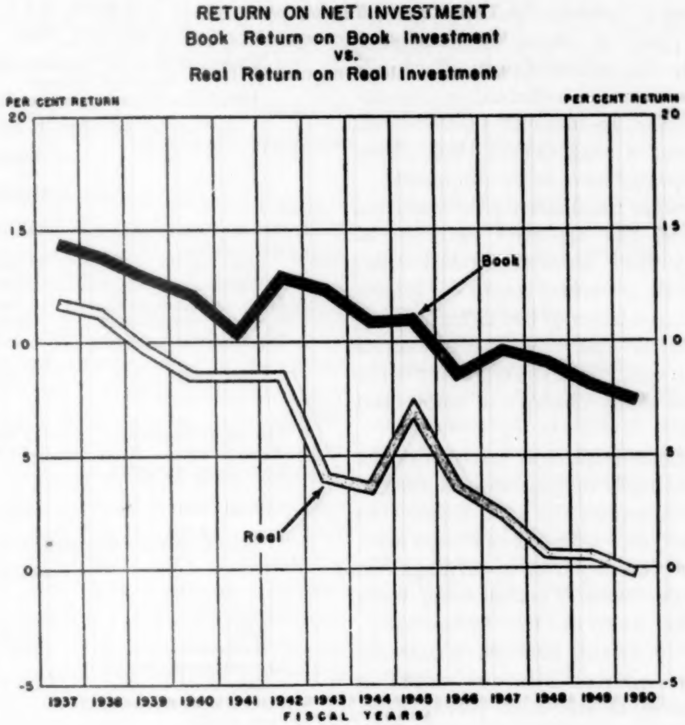

CHART 6

place the real earnings data in relevant ratio form it is necessary to compute the company's real net investment for each year. The result of this computation is illustrated for "Machinery, Inc." in Chart 5.

Net investment is total assets minus current liabilities. We excluded from asset values Treasury stock and we included marketable securities at market value rather than at cost, since the purpose here is not conservative accounting but a portrayal of the company's probable real value.

Instead of growing as the books state, the company's net investment in real goods terms declined continuously from 1936 to 1950.

Findings on real return on net real investment are compared with book return in Chart 6. This chart shows that the real rate of return has been much lower and has fallen more rapidly than the rate of return revealed by the conventional accounts.

Disparity Between Real and Book Earnings

There are three ways in which conventional measures of income are distorted by price fluctuations. First, the accounts of any one year are a jumble of past and present dollars of different value that cannot validly be added together to show a statement of the company's real economic situation and performance. Second, the earnings and assets of one year are not comparable to those of another year if the two price levels are different. Third, since

prices of some commodities rise or fall more than prices of others, there are gains and losses in the values of particular kinds of assets that are not reflected in conventional accounts. In order to measure real earnings over a long period these three kinds of disparity have to be eliminated.

An analysis of the disparity between real earnings and the reported earnings of "Machinery, Inc." shows the relative importance of these several sources of distortion. The explanation of the difference between reported and real income varies from year to year, since the disparity is the net result of many changes in assets and price levels.

A convenient method of analysis is the conventional table of sources and uses of funds. By comparing the book statements of sources and uses with the real fund flow, the causes of the disparity in earnings can be made quite clear. The following table presents the analysis for "Machinery, Inc." for 1949. In this table book data are as recorded and real data are stated in terms of prices of the most recent year. The choice of price level for the analysis is arbitrary; the important thing is to have book and real figures stated in the same size dollar. The disparity figures in the lower half of the table are simply the net differences between real and reported data in the first part of the table.

TABLE I

MACHINERY, INC.

Sources of Disparity Between Real and Reported Income

Fiscal Year Ended December 31, 1949

A. SOURCES AND USES OF FUNDS

	(Thousands of Dollars) (a) *Reported*	(b) *Real*[1]
Sources:		
1. Retained income	566	(12,328)
2. Depreciation		
Plant	1,686	2,922
Machinery	6,780	14,250
3. Decrease in cash account	756	1,666
4. Inventory reduction	4,008	6,780
5. Investment liquidation	460	460
Total sources	14,256	13,750
Uses:		
6. Machinery additions	12,296	11,836
7. Plant additions	1,874	1,828
8. Retirement of capital	86	86
Total uses	14,256	13,750

B. ANALYSIS OF INCOME DISPARITY[2]

	Amount	*Proportion* —%
2. Underdepreciation		
Plant	1,236	9.5
Machinery	7,470	58.1
Understatement of cash decline	910	7.1
4. Understatement of inventory decline	2,722	21.6
5. Overstatement of growth in fixed assets	506	3.7
Total overstatement of earnings	12,894	100%

[1] 1951 dollars.
[2] Column (b) minus column (a) for individual rows.

VI. SUMMARY

It is the responsibility of management to know what is happening to the investment with which it is entrusted. What the real economic investment is, what real earnings on it are, and what real rate of return it is producing for stockholders are matters management should know. When prices are rising, accounting reports on these three matters are not likely to be correct. Conventional reports can be seriously in error and thus produce an illusion, an inflation puff, that can lead management astray.

Measurement of a company's real economic earnings has great practical usefulness. And it can be done. It cannot be done simply, as in the case of personal income, by dividing one single index number into the reported accounting earnings. Instead it must take the form of restating each asset or each group of assets in terms of dollars of constant purchasing power. This can be done with tolerable accuracy and applied with economic and statistical sophistication.

DEPRECIATION POLICY UNDER CHANGING PRICE LEVELS*

EDGAR O. EDWARDS
Assistant Professor, Princeton University

THE FEELING HAS INCREASED in recent years that the traditional accounting technique of computing depreciation on the basis of the original cost of fixed assets is inadequate, particularly during periods of rising prices. Some of the best evidence of this can be found in the efforts of business firms to find an acceptable way to increase the annual depreciation charge, preferably as a reduction in profits in order to reduce tax and perhaps wage liability, but as a reservation of profits in any case in order to facilitate the maintenance of real capital.[1] Witness, also, the amazing number of pamphlets, books and articles in both accounting and economic journals on the subject.[2] For further evidence one need only observe the increasing concern of the government with depreciation both as a tax problem and as a means, via accelerated depreciation, of encouraging defense production.

These concerns are genuine. Straight-line depreciation based on historic cost is inaccurate, if not grossly misleading, during periods of rising prices. Furthermore, despite the tendency for some accountants to favor traditional depreciation accounting during periods of falling prices, that policy is equally misleading. In fact, so long as the general price level or the prices of the fixed assets being depreciated are changing in either direction, straight-line depreciation on original cost yields unrealistic estimates.

Various remedial techniques have been developed for the rigidity of historic cost depreciation and the resulting difficulties of measuring economic profit, taxable profit and funds necessary for replacement. Some of these involve changes in the timing of depreciation charges; others require special reservations of profit; those techniques, however, which break substantially from traditional methods make use of depreciation bases other than historic cost, usually the current cost of fixed assets, the historic cost adjusted by a general price index or the actual cost at the time of replacement. Which of the first two methods is the "better" has involved some controversy. Both are often referred to as approximations of the third.

It is my purpose in this paper to suggest that both current cost and adjusted historic cost have an accounting role to play, that these techniques are essentially complementary rather than competitive, and that actual cost at the time of replacement is a concept which properly should be abandoned for depreciation purposes. In the process of establishing these points one possible approach to depreciation under changing price levels will be developed which utilizes both the current fixed asset cost ("current cost") and historic cost adjusted by a general price index ("purchasing power cost") as bases for depreciation. This approach, considerably simplified for expositional purposes, has as its

* This paper is an outgrowth of research done under the auspices of the Organizational Behavior Section at Princeton University. The author is deeply indebted to Professor Philip Bell of Haverford College who has made many suggestions for improving the quality of the article.

[1] The annual reports of DuPont and U. S. Steel since the end of World War II provide two interesting examples of this kind of development.

[2] A notable effort to reconcile accounting and economic views of depreciation and profits is reported in Study Group on Business Income, *Changing Concepts of Business Income* (New York: The Macmillan Co., 1952).

primary aim a meaningful statement of economic profit, but appears to have advantages for computing taxable profit and taxable gains, and for making replacement, properly considered, possible.

The application of this technique would involve certain practical difficulties but I do not believe them to be insurmountable. Even crude attempts should result in an improvement over present depreciation practices. During periods of rapidly changing prices crude measurements of a relevant item are likely to be much more meaningful than accurate measurements of an irrelevant one (in this case, historic cost).

THE DEFINITION OF ECONOMIC PROFIT

The economic definition of income as the amount which one can consume during a period and still be as well off at the end of the period as at the beginning[3] is not, I think, appropriate for this problem.

First, the values which must be compared at the beginning and at the end of the period are subjective values. They have meaning to the individual but very little significance for anyone else. For most economic purposes, business profit must be measurable according to market criteria; for tax purposes income should, for obvious reasons, be computed in some uniform fashion. A computation of corporate profits according to an objective set of rules should furnish valuable information to the outside analyst or to the prospective entrant into the industry because the basis for the reported figures can be clearly understood. Subjective estimates have their place in the decision-making process of each firm (though this is less clear in the case of large corporations), but objective tests of profitability will continue to have more value for the outsider so long as the bases for subjective valuations are either not disclosed (if they could be) or are subject to bias in the process.

Second, it is useful to regard economic profit as being related to current production rather than to anticipated production. A comparison of subjective asset values at the beginning and end of a period is essentially a comparison of past revenue-cost expectations with current revenue-cost expectations. Thus, income is derived from expected profits (or net receipts) and represents essentially a smoothing out of a series of future profits. Profit is, therefore, a more fundamental concept than income. Further, the measurement of profit, as contrasted to the measurement of profit expectations, is concerned with past, as opposed to future, events. Hence, profit on a current production basis measures the difference between the identifiable value of current output and the value of identifiable current inputs. On the level of the individual firm or industry, these profit figures are meaningful for evaluating the allocation of resources and the composition of output. The aggregate of these figures would be consistent with the concept of profits toward which national income accountants appear to be working.

The identification of inputs and their values is crucial to this view of profit. Identification must be as exhaustive as possible. All inputs (whether the return each receives is a direct payment or an imputed one) that can be identified and for which values can be discovered must be deducted as a cost of current production.

Following this line of reasoning we shall define profit as a residual. It is that part of revenue which cannot be identified as a cost of any particular factor of production. To determine "economic profit," revenue must be measured in current prices and

[3] J. R. Hicks, *Value and Capital*, Second Edition (Oxford: Clarendon Press, 1946). pp. 172 ff. See also Sidney S. Alexander, "Income Measurement in a Dynamic Economy," *Five Monographs on Business Income* (New York: Study Group on Business Income of the American Institute of Accountants, July 1, 1950) in which the author leans heavily on this concept.

TABLE I

DEPRECIATION, PROFIT AND TAXES: STABLE PRICES

Period	*1*	*2*	*3*	*4*	*5*	*Total*
Revenue before Depreciation	$500	$500	$500	$500	$500	$2,500
Depreciation	*200*	*200*	*200*	*200*	*200*	*1,000*
Profit	300	300	300	300	300	1,500
Taxes (40%)	120	120	120	120	120	600

compared with all identifiable costs measured in current prices as well. The current prices applicable to revenue are those which could be *received* in the market during the period. Thus long-term sales contracts, for example, might result in a deviation of actual revenue from revenue at current prices. The current prices applicable to costs are the current market prices which the firm might *pay* for the goods and services the firm uses during the period. Long-term buying contracts and fixed assets purchased in a prior period may give rise to a discrepancy between actual money costs and costs at current prices.

By current cost we mean the cost of purchasing (if such a market exists) the actual factor services used in current production—not the cost of the most efficient factors that might have been used. Hence, technological change creates a problem only if it destroys markets for now-outdated factor services. Other sources of cost estimates must be found in that event—presumably opportunity cost.

Economic profit, then, is the difference between current revenues and current costs. It represents the difference between the *economy's* current valuation of the goods and services *rendered* by the firm and its current valuation of the goods and services *used* by the firm. Profits computed in this fashion could be aggregated into meaningful totals for industries and would be consonant with the concept of profits desired for national imcome purposes.[4]

This concept of profit is basic to the argument to follow. Concepts of taxable profit and of relevant replacement cost will be developed in the course of the discussion. We shall assume that the only possible source of deviation of taxable profit from economic profit is the use of fixed assets by the business firm. Other sources will not be considered explicitly, but the treatment accorded fixed assets can be generalized for other kinds of deviations as well.

THE SIMPLE CASE: NO PRICE CHANGES

The hypothetical data in Table I may be used to illustrate depreciation, profits and taxes in a stable price situation. It is assumed that fixed assets having a life of 5 years are purchased by a firm for $1,000.00 and are depreciated according to the straight-line method. We abstract from technological change and assume that prices throughout the economy do not change.

In this simple and highly unrealistic situation, depreciation presents no problem. It is the same amount whether computed on current cost or on historic cost; therefore, the use of original cost to compute depreciation coincidentally yields the proper figure.[5] So far as depreciation

[4] Solomon Fabricant has indicated some of the elements of business income which must be adjusted if consistency with national income measurements is desired. "Business Costs and Business Income Under Changing Price Levels," *Five Monographs on Business Income, op. cit.*, pp. 143–54.

[5] The cost which should be deducted in arriving at economic profit is the current cost of the services *provided* by the fixed assets which would undoubtedly differ from straight-line depreciation on the current cost of the asset itself if only because the latter reflects in part, the value of *anticipated* services as well as of current services. This refinement, though desirable, must await better estimation techniques than are now available.

TABLE II
DEPRECIATION, PROFIT AND TAXES: PROPORTIONATE PRICE CHANGES

Period	*1*	*2*	*3*	*4*	*5*	*Total*
Price Index	100	125	150	175	200	
Current Cost of Fixed Assets	$1,000	$1,250	$1,500	$1,750	$2,000	
Revenue before Depreciation	500	625	750	875	1,000	3,750
Depreciation (Current Cost)	*200*	*250*	*300*	*350*	*400*	*1,500*
Economic Profit	300	375	450	525	600	2,250
Taxes (40%)	120	150	180	210	240	900
Depreciation (Original Cost)	200	200	200	200	200	1,000
Present Taxable Profit	300	425	550	675	800	2,750
Taxes (40%)	120	170	220	270	320	1,100

affects them, economic profit and taxable profit are identical. Further, there are no capital gains to contend with. Finally, the funds equivalent to the depreciation charge are sufficient to provide exact replacement at the end of the fifth period if the firm chooses to reserve them for that purpose.

PROPORTIONATE CHANGES IN PRICES

Let us look at another equally unrealistic but more enlightening situation—one where it is assumed that *all* prices change proportionately at the beginning of each period. Different depreciation techniques now yield different results. The hypothetical data in Table II are based on the current cost criterion set forth above; i.e., depreciation is computed each year as 20 per cent of the current cost of fixed assets which is an estimate of the current cost of services rendered.

It will be noted that taxable profit, as it is computed today, exceeds economic profit by the difference between depreciation on current cost (which is here identical to depreciation on purchasing power cost) and depreciation on historic cost. If we explore the nature of this difference, we may find a clue to its proper treatment for tax purposes under the circumstances depicted here.

Monetary Capital Gains Realized Through Use

In dollar terms the difference between current cost depreciation and historic cost depreciation represents a capital gain realized through retention and use rather than through sale.[6] When the fixed asset depicted in Table II, for example, was purchased for $1,000, the real purchase was the acquisition of the future services of the asset at a cost of $200 per period.[7] But the value of the services rendered by the asset in subsequent periods (at then current prices) exceeds their original cost by $50 in Period 2, $100 in Period 3, $150 in Period 4 and $200 in Period 5, each amount being the difference between current cost depreciation and historic cost depreciation. These amounts represent dollar capital gains realized through use (if receipts cover depreciation in addition to other costs). They represent, also, the amortization of asset appreciation.

In the present case, where all prices are rising in proportion, the taxation of these dollar capital gains would, in reality, fall on real capital. To avoid this, depreciation must be taken in each period on the basis of cost adjusted for price level changes. Whether current cost or purchasing power cost should be used as the depreciation base for tax purposes is a question which

[6] Sidney Davidson, "Depreciation and Profit Determination," THE ACCOUNTING REVIEW, January, 1950, p. 49, notes that realized capital gains and losses may arise in this fashion. He argues against their recognition for tax purposes because of enforcement difficulties.

[7] Consistent with the practice of straight-line depreciation, discounting and interest accumulation are ignored.

will be discussed in a later section on differential price changes.

Replacement: A Management Decision

Even the exemption from taxation of monetary capital gains would not satisfy those who might argue that depreciation funds held in the form of cash should be sufficient to effect actual fixed asset replacement. If held in the form of cash, the amount available for replacement at the end of the fifth period, $1,500, is $500 short of the amount necessary for actual replacement in kind. It is essentially for this reason that E. Cary Brown discards current cost depreciation for the single asset firm.[8] He specifies continuous replacement equal in each period to the depreciation charge as the condition necessary for the method to yield the anticipated results (maintenance of real capital) in terms of replacement. This line of reasoning is quite correct *so long as funds equal to the depreciation charges are held in the form of cash when not used for immediate replacement.*

This, I submit, assumes an unnecessary rigidity in the decision-making process of the individual firm. There seems little justification for assuming that the firm must invariably select a particular mode of holding funds. Holding funds in the form of cash is but *one* alternative open to the firm. There are innumerable other choices that could be made. The firm, instead of holding cash, might hold a commodity or set of commodities, stocks or purchasing power bonds—anything whose price appreciation keeps pace with the general price level. It might choose to turn over continually the funds at its disposal. In any event, given a certain amount of funds there must be a variety of forms in which these funds can be held so that purchasing power will remain intact.[9] While holding cash is one way of attempting this, the purchase of fixed assets, whether as replacement or as new investment, can be regarded as another.

Whatever the method the firm chooses, the outcome of the choice is a legitimate test of the effectiveness of the decision-making process in the firm. Considered in this way, the amount of depreciation charged in each period on the basis of historic cost adjusted for changes in the general price level indicates the amount of funds which must be retained out of current receipts *in some form* (*open to choice*) in order to maintain undiminished the value of the firm's assets in terms of purchasing power.[10]

If all prices do not change proportionately, the opportunity exists to increase the purchasing power of a given amount of cash through judicious investment. When prices are falling, whether proportionately or not, the opportunity exists to increase purchasing power simply by holding cash. If the firm is wise enough (or lucky enough) to make such decisions, an advantage will accrue to the firm. This advantage is the direct result of *choosing* one of a set of successful alternatives. The selection of alternatives of this sort is, I submit, a proper function of management. If this is acknowledged, the case for exempting the full cost of actual replacement from taxation is buried.[11]

In the case of proportionate price changes, economic profit, which is ob-

[8] E. Cary Brown, *Effects of Taxation: Depreciation Adjustments for Price Changes* (Boston: Harvard Business School, Division of Research, 1952), pp. 100–101.

[9] We are ignoring possible legal restrictions on the choices open to the firm. In general, however, the firm is probably not unduly circumscribed in its range of choice.

[10] It should be noted again that eventual replacement in kind is itself but one of many alternatives available to the firm. This decision should be taken on the same basis as any other. The maintenance of the real value of total assets does not require replacement in kind.

[11] The argument that current cost depreciation should be exempt from taxation will be discussed in a later section.

TABLE III

DEPRECIATION, PROFIT AND TAXES: DIFFERENTIAL PRICE CHANGES

Period	*1*	*2*	*3*	*4*	*5*	*Total*
General Price Index	100	100	100	100	100	
Fixed Asset Price Index	100	125	150	175	200	
Current Cost of Fixed Assets	$1,000	$1,250	$1,500	$1,750	$2,000	
Revenue before Depreciation	500	500	500	500	500	2,500
Depreciation (Current Cost)	*200*	*250*	*300*	*350*	*400*	*1,500*
Economic Profit	300	250	200	150	100	1,000
Taxes (40%)	120	100	80	60	40	400

tained by deducting current cost depreciation, is identical to taxable profit, which, it will be argued should be obtained by deducting depreciation on purchasing power cost. The propriety of this technique for tax purposes can be checked by deflation for price changes. The data in Table II, if deflated to prices prevailing in Period 1, for example, would be identical to those in Table I except that those data which are based on historic cost would be revealed as meaningless. Revenue, depreciation, profit and taxes, when computed on a current cost basis, are identical in each period in terms of purchasing power. If the depreciation charge does not reflect rising prices, however, reported profits and taxes rise with the passage of time. Total costs are understated, profits are overstated and taxes are levied, in part, on real capital rather than on real profit alone.

DIFFERENTIAL PRICE CHANGES

The more realistic situation where the price of particular fixed assets does not move identically with other prices introduces some further complexities which merit examination. The hypothetical data in Table III are based on the assumptions that price changes are restricted to those fixed assets which the firm employs and that these changes are not sufficient to alter the general price index. Depreciation is again computed according to the current cost criterion and price changes are assumed to occur at the beginning of each period.

Economic profit again indicates the amount by which revenue at current prices exceeds identifiable current costs. Specifically, the trend of economic profit spells out the decreasing profitability of using these kinds of fixed assets in this particular way in this industry. The insider can take heed, while the outsider, too, is not so likely to be misled by profit reports and enter the industry, making it even less profitable for everyone.

The tax situation, as it now stands, is a more pleasant one. The business firm is paying over to the government fewer units of purchasing power than it was in either of the preceding cases. This is a direct result of the transference of $500 in total from the category of economic profit to depreciation as a result of the rise in the price of fixed assets while all other prices remained stable.

Real Capital Gains Realized Through Use

If the fixed assets had been sold during their lifetime, the firm would have realized a real capital gain which would have been taxed (and properly so). The use of the fixed assets by the firm is an alternative way of realizing a similar gain.[12] Table III takes no account of this kind of gain (or loss) which the individual firm may receive.

[12] The gain may not be the same, however. The market in which the firm can sell may not be the same (if one exists at all) as that in which it buys. Further, the price of new assets may not be related to the price of second-hand assets as simply as straight-line depreciation implies.

If after the price changes which occur at the beginning of the second period (see Table III), the firm's fixed assets (now one period old) have a market value of $1,000 as compared to a book value of $800, there is a capital gain of $200 which is as yet unrealized. This gain is potentially real and not monetary because it has resulted from a change in fixed asset prices unaccompanied by any change in other prices. should not be confused with the fact that the purchasing power derivable from these assets has risen. The way in which the firm chooses to utilize the purchasing power is a management decision and the economic profit derived from this use is a legitimate test of decision-making ability. Table III should include therefore, the following data in order to present the full tax picture:

Period	*1*	*2*	*3*	*4*	*5*	*Total*
Real Capital Gains Realized..........	—	$50	$100	$150	$200	$500
Tax on above (40%)................	—	20	40	60	80	200
Total Taxes..........................	$120	120	120	120	120	600

If the indicated change in fixed asset prices between Period 1 and Period 2 were the only price change to occur during the life of the asset, the $200 capital gain would be realized through use at the rate of $50 per subsequent period, the excess of current cost depreciation over historic cost depreciation in each period.

The firm could be asked to pay a tax on that part of its depreciation charge which represents the use of appreciated purchasing power. While these gains and losses should not be included in economic profit or in national income, the fact that individuals and firms do receive them and that purchasing power is augmented thereby justifies their taxation.[13] It can be argued that these gains are really a part of the higher cost of doing business and should be exempt from taxation on that ground, but this confuses the fact of the gain with the particular manner in which the firm chooses to use it. If the higher price of the fixed assets is the result of increased demand in other industries or uses, it probably indicates the advisability of finding a cheaper substitute in this industry. This is a choice the firm must make and the necessity of making the decision

The real capital gain realized in each period is the difference between depreciation on a current cost basis and depreciation on a purchasing power cost basis (in this example, the latter equals depreciation on historic cost). It indicates the amortization of real fixed assets appreciation. When these real gains are taxed, the firm pays total taxes of $600, the same amount in purchasing power units that it paid in the other cases we have considered.

It will be noted that one criterion for the taxability of gains is that the gain be realized. Yet purchasing power is potentially augmented by unrealized gains. Taxes, however, must be paid in cash. If gains or losses are not reflected in changes in holdings of reasonably liquid assets, their taxation may force a company to make decisions regarding the liquidity of its assets which it would not otherwise deem advisable. A firm may be forced to realize the gains through sale. Ideally, unrealized gains and losses should be recognized for their effect on tax *liability*, but their effect on tax *payments* should be deferred until the gains and losses are realized. So long as this distinction is not made, gains and losses should be recognized for tax purposes only when realized.

[13] See Brown, *op. cit.*, p. 135.

Replacement

Providing for actual physical replacement is even more difficult in this case. Total depreciation funds, $1,500, are not only insufficient, if held in cash, to effect replacement in kind, but the opportunities to invest the funds to yield the necessary replacement amount at the end of the fifth period are limited to these particular kinds of assets because they are the only commodities rising in price. Provision for exact replacement seems almost impossible. When that part of total depreciation which represents a real capital gain is subject to taxation, exact replacement with depreciation funds becomes even less feasible.

But the fact must again be emphasized that replacement in kind, when replacement is due, is but one alternative among many. If prices of these fixed assets have risen relative to other prices it is possible that the firm would choose other alternatives regardless of the funds at its disposal. If exact replacement is made, the firm has chosen an alternative which requires more purchasing power than its original investment represents. If exact replacement cost were exempt from taxation when the prices of these fixed assets were rising faster than other prices, the firm would make a non-taxable gain. The particular use to which the firm chooses to put the gain does not alter the fact. On the other hand, if specific fixed asset prices were falling relative to other prices, the taxation of profits based on current cost depreciation would not exempt sufficient funds to maintain general purchasing power. The use of inefficient assets might be prolonged because funds sufficient to take advantage of other alternatives may not be available.

If the firm is permitted to retain its *general* purchasing power free of taxation, the firm is free to make any investment decision it wishes. At the same time, its taxable gains and losses are equitably computed. The criterion for tax purposes of maintaining general purchasing power also avoids placing actual replacement cost on a pedestal and makes it clear that replacement in kind is but one of a host of alternatives. Hence, while current cost depreciation is necessary to obtain a statement of economic profit, depreciation based on historic cost adjusted for changes in the general price level is the proper deduction for tax purposes.[14] It might be desirable, of course, to tax economic profit and real capital gains at different rates.[15]

THE PRACTICAL APPLICATION OF THE METHOD

Four bases have been considered on which depreciation can be computed—original cost, current cost (cost at current market prices of the assets when used), purchasing power cost (historic cost adjusted for changes in the general price level), and cost at the time of actual replacement. The first and the last of these have been discarded for purposes of computing both economic profit and taxable profit. The use of current cost has been suggested as most appropriate for determining economic profit while purchasing power cost has been advocated for tax

[14] See Arthur M. Cannon, "Tax Pressures on Accounting Principles and Accountants' Independence," The Accounting Review, October, 1952, pp. 419-26, for a good discussion of the need to distinguish between taxable and business income.

[15] If real income is to be the tax base for corporations, the question arises as to whether it should not be the tax base for others also. Ideally, the answer must be "yes" from the equity point of view. To assure equity to all, taxes should be levied on real gains and real income because only in this way can differentials in real income be fully allowed for in the tax structure. The practicality of making these adjustments in other areas must, of course, be considered. Even if it is not practical there, however, equity might best be served by the adoption of a real basis wherever possible. Uneven application can gradually be corrected and temporary inequities can be roughly adjusted through differential tax rates. Improvement must be gradual if it is not to be revolutionary; the discarding of an improvement because it cannot be applied all at once simply rigidifies existing errors. (See Brown, *op. cit.*, pp. 76-78 for some opposing arguments.)

purposes.[16] The division of taxable income into economic profit and real capital gains not only serves analytical purposes but also permits the application of differential tax rates.

The Index Number Problem

To record the information suggested two indexes would be required: A general index of purchasing power and an index of the prices of fixed assets used by each firm. The former could be constructed objectively and independent of the firm; the latter would have to be constructed by (or for) each firm (or industry) according to objectively determined standards and rules. Fixed assets, classified by year of purchase, could be ajdusted by the internal index for the purpose of determining the amount of depreciation to be deducted in arriving at economic profit. The general price (or external) index could be applied to the original cost of these assets to determine the amount of depreciation deductable for tax purposes. A comparison of this charge with the charge based on current cost would disclose the amount of real capital gain or loss realized during the period.

The difficulties involved in computing an appropriate general price index should not be minimized.[17] Changes in quality are especially difficult to comprehend. The difficulties involved in computing an internal index are of a different order. It should apply to the particular assets of the firm. Current prices are needed on those particular assets. If identical assets are no longer made and marketed, difficulties multiply. Cost of production would be too high a figure to use (if it were not, there would most likely be a market and a market price). Some substitute price would have to be found, probably on the basis of opportunity cost. Despite these difficulties, the results obtained should be more accurate and more equitable than figures computed on the basis of known but generally irrelevant historic cost.

Application in the Accounts: An Illustration

As the information developed in the accounts should include balance sheet data as well as profit and loss data, unrealized gains and losses must be recognized as they accrue. The net amount of these gains and losses shown on the books at any one time could be termed a revaluation surplus. The true nature of this "surplus" is more accurately revealed, however, when it is designated as unrealized gain or loss. It will be advantageous to segregate these gains and losses as they accrue into real and monetary portions. The distinction must be made when these gains and losses are realized; the real part, which is taxable, must be distinguished from the monetary part, which is not taxable. To illustrate briefly one way of doing this we shall use the data in Table IV. Price changes are assumed to occur at the beginning of each period.

The amounts of realized capital gain can be determined as amortizations of unreal-

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[16] Current cost and purchasing power cost have vied for the attention of accountants. An excellent case for current cost depreciation is presented by W. J. Graham, "The Effect of Changing Price Levels on the Determination, Reporting, and Interpretation of Income," THE ACCOUNTING REVIEW, January, 1949, pp. 15–26. Myron J. Gordon applies current cost in the accounts in "The Valuation of Accounts at Current Cost," THE ACCOUNTING REVIEW July, 1953, pp. 373–84. K. Engelmann in "The Realization Basis of Determining Income Would Eliminate Distortions Caused by Inflation," *Journal of Accountancy*, October, 1950, pp. 321–3, also presents an appeal for current cost. Donald L. Raun in "Income: A Measurement of Currently Added Purchasing Power Through Operations," THE ACCOUNTING REVIEW, July 1952, pp. 352–58, presents a good case for the purchasing power basis. The combination of the two bases in a system of accounts seems to have escaped detailed analysis in recent years. Sweeney treated replacement cost in his system in a somewhat different fashion. (*Stabilized Accounting* (New York: Harper & Brothers, 1936), Chapter III.)

[17] See Brown, *op. cit.*, pp. 131–136 and Solomon Fabricant, *Capital Consumption and Adjustment* (New York: National Bureau of Economic Research, 1938), pp. 159–160 and ff.

TABLE IV

DEPRECIATION, PROFIT AND TAXES: DIFFERENTIAL PRICE CHANGES

Period	*1*	*2*	*3*	*4*	*5*
General Price Index	100	120	140	160	180
Fixed Asset Price Index	100	150	200	250	300
Revenue	$500	$600	$700	$800	$900
Depreciation (20%) (Current Cost)	*200*	*300*	*400*	*500*	*600*
Economic Profit	300	300	300	300	300
Taxes (40%)	120	120	120	120	120
Unrealized					
Capital Gain	0	400	300	200	100
Monetary	(0)	(160)	(120)	(80)	(40)
Real	(0)	(240)	(180)	(120)	(60)
Realized					
Capital Gain	0	100	200	300	400
Monetary	(0)	(40)	(80)	(120)	(160)
Real	(0)	(60)	(120)	(180)	(240)
Tax on Real Gain (40%)	0	24	48	72	96
Total Taxes	120	144	168	192	216

ized gain. The dollar value of the assets after the price change at the beginning of Period 2 is $1,200 (current cost minus current cost depreciation for one period). Subtracting the book value ($800) yields the estimated capital gain, $400, which would be realized if the assets were sold. Until sold or used, however, it represents an unrealized capital gain. If prices did not change further, the capital gain would be realized through use at the rate of $100 per period for the remaining four periods. As prices rise again at the beginning of Period 3 a further unrealized gain accrues, this one amounting to $300—new current cost depreciated, $1,200, less the current cost of last period depreciated to date, $900 ($1500 less depreciation for two periods, $600). This gain will be realized through use at the rate of $100 per period for the remaining three periods. Another unrealized capital gain amounting to $200 accrues at the beginning of Period 4 and one of $100 accrues at the beginning of Period 5, each the result of further price changes. Each of these gains would be realized in a fashion similar to the others. The sum of the gains *realized* in each period is equal to the difference between current cost depreciation and historic cost depreciation, i.e., the realized gains can be represented as amortizations of asset appreciation.

If both the general price index and the fixed asset price index are based on the year in which the fixed assets were purchased, the total unrealized capital gain which accrues at any time can be approximated by the following formula:

$$(1) \qquad \Delta C = N_{t-1}(F_t - F_{t-1})$$

where ΔC is the unrealized capital gain (change in money value), N is the remaining book value of the assets as computed with the historic cost method, and F is the fixed asset price index divided by 100.

This amount is an unrealized gain or loss. It can be further divided into its potentially real and potentially monetary parts. The purely monetary unrealized gain or loss is given by

$$(2) \qquad \Delta C_m = N_{t-1}(G_t - G_{t-1})$$

where G is the general price index divided by 100. The real segment of the unrealized gain or loss can be determined by subtraction. It is given by

$$(3) \quad \Delta C_r = N_{t-1}(F_t - F_{t-1}) - (G_t - G_{t-1}).$$

The amount of the total capital gain or loss *realized through use* in each period is the difference between current cost depreciation and historic cost depreciation. That part of the realized gain or loss which is purely monetary can be determined as the

TABLE V

SKELETON ACCOUNTS SHOWING THE DEPRECIATION TECHNIQUE APPLIED

Fixed Assets

(0) 1,000	

Allowance for Depreciation

	(1a) 200
	(2b) 200
	(3b) 200
	(4b) 200
	(5b) 200

Fixed Asset Value Adjustment

(2a) 400	(2b) 100
(3a) 300	(3b) 200
(4a) 200	(4b) 300
(5a) 100	(5b) 400

Unrealized Real Gain or Loss

(2c) 60	(2a) 240
(3c) 120	(3a) 180
(4c) 180	(4a) 120
(5c) 240	(5a) 60

Unrealized Monetary Gain or Loss

(2d) 40	(2a) 160
(3d) 80	(3a) 120
(4d) 120	(4a) 80
(5d) 160	(5a) 40

Realized Real Gain (Taxable)

To P&L 60	(2c) 60
To P&L 120	(3c) 120
To P&L 180	(4c) 180
To P&L 240	(5c) 240

Depreciation

(1a) 200	To P&L 200
(2b) 300	To P&L 300
(3b) 400	To P&L 400
(4b) 500	To P&L 500
(5b) 600	To P&L 600

Retained Earnings

	(2d) 40
	(3d) 80
	(4d) 120
	(5d) 160

difference between depreciation on a purchasing power cost basis (historic cost multiplied by the general price index) and depreciation on the historic cost basis. The difference between current cost depreciation and purchasing power cost depreciation represents the real gain or loss realized during the period.

The skeleton accounts in Table V indicate how this information might be recorded in each period as it pertains to depreciation and related accounts. The circled numbers indicate periods in which entries are made while the letters designate particular entries. Starting with a new purchase of fixed assets having a five-year life and a cost of $1,000, depreciation is recorded throughout on the historic cost basis in the Allowance for Depreciation account. Adjustments for price changes are handled in additional accounts.

Entry (1a) records historic cost depreciation only, because prices have not changed during Period 1. Entry (2a) records, as a debit, the total increase in the value of the fixed assets at the beginning of Period 2 and, as credits, the unrealized real gain and the unrealized monetary gain. Entry (2b) records current cost depreciation at the end of Period 2, carries historic cost depreciation to the Allowance for Depreciation account and records that part which represents realized gain as a credit to the Fixed Asset Value Adjustment account (a separate account might be established for this additional "allowance"). Entry (2c) transfers the realized real gain from the unrealized account to the realized account from where it would be closed to the Profit and Loss account.[18] Entry (2d) transfers the realized monetary gain directly to the Retained Earnings account as it reflects a purely monetary change and is not taxable. Entries for subsequent periods can be traced in similar fashion.

[18] It should, of course, be shown separately on the profit and loss statement where economic profit, realized capital gains and losses, and total taxable income should be carefully identified.

On the balance sheet fixed assets might be shown as follows at the end of Period 2:

Fixed Assets (Historic Cost)	$1,000
Less: Allowance for Depreciation	400
Remaining Historic Cost	600
Add: Fixed Asset Value Adjustment	300
Current Value of Fixed Assets (estimated)	900

The proprietorship section of the balance sheet would show the amount of unrealized real gain or loss and the amount of un-unrealized monetary gain or loss, the sum of the two being equal to the amount of the fixed asset value adjustment.

Should the assets be discovered to have value after the estimated life has expired, this value should be written up in the value adjustment account and in the Unrealized Real Gain or Loss account. Depreciation should continue to be recorded on a current cost basis so that profit figures would not be misleading. The credit entry for depreciation would go to the value adjustment account. The whole amount would be realized gain and should be transferred to the Realized Real Gain or Loss account. In this way both the balance sheet and the profit and loss statement would record vital economic data while taxable income could be easily identified and classified.

CONSISTENCY AND CONSERVATISM

Conservatism in accounting frequently demands inconsistency and this is nowhere more apparent than in the accounting profession's positions on the appropriate accounting techniques applicable in periods of rising prices as compared to those techniques advocated for use in periods of falling prices. Consistency is not necessarily a hallmark of accuracy but where a technique is conceded to be accurate in periods of rising prices, there should be at least a presumption that it will be accurate if consistently applied in periods of falling prices. The possibility should be recognized that what may be parading under the banner of conservatism is nothing more heroic than group self-interest, not accuracy.

> Where conservatism is blindly adhered to even at the expense of good accounting, it is being carried too far. Conservatism, of itself is not a virtue. It is a good residual, or background, rule. Where the course is not otherwise clear, resort to conservatism. Conservatism is no excuse, however, for failure to furnish owners and managers with essential 'economic data'.[19]

Certainly for decision-making as well as analytical purposes accurate reporting should take priority over conservative reporting. Accounting for depreciation under changing price levels is not an area where sound reasons for exception can be found. Yet the expressions of many business and accounting groups on the price level problem have become most pronounced during periods of rising prices and even then their observations are frequently hedged by adherence to historic cost as a basis for depreciation during periods of falling prices whenever the use of this basis will result in higher depreciation estimates.

George O. May has presented such a depreciation proposal.[20] Briefly his position is that historic cost should form the basis for each annual depreciation charge. If the *general* price level rises, a special reserve would be established to which an additional amount of depreciation would be credited to bring the total charge up to the current general price level. When prices are generally falling the reverse procedure would operate until the special reserve is extinguished after which depreciation on historic cost would be reestablished. If current or carry-over expenditures for plant fall short of the depreciation charge, the amount allowed as a charge would be re-

[19] Herbert F. Taggart, "Sacred Cows in Accounting," The Accounting Review, July, 1953, pp. 313–19.

[20] George O. May, *Business Income and Price Levels: An Accounting Study* (New York: Study Group on Business Income of the American Institute of Accountants), July 1, 1949, Appendix V, "Proposal for Depreciation of Current Costs," pp. 105–9.

duced but not below that computed on the historic cost basis.

This differs from the proposal presented here in two major respects: (1) it takes no account of current fixed asset cost and (2) it posits depreciation on historic cost as a minimum charge so long as full historic cost has not been exhausted. The second point requires further consideration.

May recognizes that theoretical considerations do not support his exceptions[21] and relies on two practical appeals to support his case for historic cost depreciation as a minimum charge: (1) failure to provide for recovery of cost would deter investment and (2) established principles of income taxation require that cost recovery be permitted and that total accumulated reserves do not exceed total accumulated cost.[22]

The matter of tax principles has received considerable attention from others in recent years.[23] It should be clear, therefore, that tax "principles" as embodied in the law may not be principles at all but merely expediencies. Hence, if changes in depreciation accounting are warranted for accounting, business, economic and social reasons, laws should be changed to conform to principles. Realism requires not only an appreciation of the law but also an awareness that it can be and often should be changed.

The effect on investment incentives of placing both depreciation and taxation on a real instead of a purely monetary basis is not clear. If such a system were initiated during a period of falling prices (which seems highly unlikely) the money illusion might have a deadening effect on investment. Businessmen might view a depreciation charge lower than that which the historic cost basis would provide as a means of transferring capital recovery to the category of taxable profits. If they are so easily misled by money figures, however, they should succumb as easily to the more pleasant and more real effect on reported profits. As depreciation charges are reduced, reported profits rise and what businessmen may have mistaken for losses may now be recognized as smaller losses or even profits. The perception of their true profit status may encourage investment. Which of the two effects would prove the stronger is difficult to determine.[24]

If businessmen are not misled by accounting figures computed on the historic cost basis, they may be aware of the subsidy hidden in historic cost depreciation during periods of falling prices. These charges reduce reported profits and therefore taxes. It should be clear, however, that the subsidy is realized only if profits are positive. Further, if it is felt that subsidization is necessary in such a period, perhaps an open subsidy independent of depreciation policy might be preferable. (Businessmen frequently extol the virtues of the open subsidy in the case of supports for farm income!) Further, if a subsidy is needed when profits are positive, it would appear to be more necessary when they are negative.

Businessmen do not appear to be led astray by money measures during periods

[21] *Ibid.*, p. 107.

[22] *Loc. cit.*

[23] "The tax laws have unduly and unintentionally tended to influence the development of corporate accounting in that to some extent legislative concessions in measuring taxable income have been adopted into accounting practice without justification in principle." (Committee on Concepts and Standards Underlying Corporate Financial Statements, "Accounting Principles and Taxable Income," Supplementary Statement No. 4, The Accounting Review, October, 1952, p. 429).

The following statement appears in the same journal: "Accountants should resist efforts to prostitute accounting principles to tax ends; accountants' reports must be determined independently of tax considerations." (Arthur M. Cannon, *op. cit.*, p. 426).

[24] While arguing against replacement cost depreciation, A. R. Prest concedes that its use means higher profitability and higher savings because of the tax effects. ("Replacement Cost Depreciation," *Accounting Research*, July, 1950, pp. 385–402). See also S. P. Dobrovolsky, "Depreciation Policies and Investment Decision," *American Economic Review*, December, 1951.

of rising prices. If depreciation in real terms were initiated in such a period (which is more likely), their knowledge that money measures are often illusory should be strengthened. Then if the money illusion should be resurrected during periods of falling prices, it can be tabbed for what it is—a search for a hidden subsidy.

CONCLUSION

Regardless of how one may feel about the present practicality of recording depreciation on the books so as to reflect the results of price movements, it is difficult for anyone to deny the trend toward realistic accounting. Recognition is spreading that easily determinable dollar figures are not realistic if they are inaccurate. Viewed in this fashion, those accounting techniques which are most practicable are often the most unrealistic. The increasing concern with this fact is evidence that the search for more accurate accounting methods is well underway and is not likely to be halted by those who preach impracticality. Improvement in accounting is to be achieved by making accuracy more practical.

The techniques suggested in this article deviate in many respects from the ideal. I think, however, that they represent a realistic compromise between proponents of accounting for general price changes and those who support accounting for specific current costs. The compromise lies in the fact that both are used; it is a realistic compromise, however, because both are truly needed. If the forces supporting each can be joined, perhaps changing price levels will be recognized in practice as well as in theory.

SHARE CAPITAL IN FOREIGN EXCHANGE ACCOUNTING

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It is an established principle of accountancy that assets and liabilities which are expressed in a currency other than that in which the capital is expressed, are to be converted into the currency of the capital. This principle follows quite naturally from the fundamental proposition that accounting is the art to record the history of a capital in the sense of a fund set aside for a particular business purpose.

In fact there are two reasons which lead from the notion of recording the history of a fund to the principle of converting assets and liabilities into the currency of the capital.

First, there is a technical consideration. Accounting, as a self-contained system of figures, can be performed only in terms of one standard of recording. Otherwise it is not possible to determine what has become of the original fund, whether it has grown or shrunk. Accordingly, if more than one currency is involved conversion has to take place. For this formal purpose, however, it is irrelevant whether the capital is converted into the currency of the assets and liabilities, or vice versa, the assets and liabilities are converted into the currency of the capital. As a matter of fact, only the second alternative is used. The rules of the proper rates of exchange show this clearly: they require that current assets and liabilities are to be converted into the currency of the capital at the rate in force at the date of the balance sheet and fixed assets and long term liabilities are converted at the rates prevalent at the date of their originating. But there is no rule for the conversion of capital into the currency of assets and liabilities. This procedure follows from a second line of thought.

The final statement of accounts, the balance sheet, is drawn up mainly for and on behalf of the suppliers of the capital. If they have provided the capital in terms of their home currency, they of course expect to obtain their annual reports in terms of the same currency. The accounting rule thus expresses the economic fact that capital export has been made in terms of the currency of the creditor country. In the alternative case, if the suppliers of the capital were willing to invest in terms of the currency of the debtor country, the question of conversion does not come up in the books. The capital fund was then converted into the currency of the debtor country already before it entered the business, and the accounts of the business are thereafter kept in terms of the debtor currency as concerns both the capital and the assets and liabilities.

The practical conclusion for the accountant is that the currency in which the capital is expressed determines the currency in which the books are to be kept and into which assets and liabilities are to be converted.

This line of reasoning is, however, based on a tacit assumption which is not always given. The assumption is that the suppliers of the business capital have adequately expressed their intention of whether they wish to make the investment in terms of the currency of their home country or in terms of the currency of the debtor country, by choosing the currency in which the

capital is expressed. Under normal circumstances, this, indeed, is the case. But it may happen that the suppliers of the capital cannot express the capital in terms of the currency of the debtor country because the latter has no currency of its own. This for instance occurs when a business is started in a newly conquered country or in a colonial country with a dependent currency. Of necessity, a foreign currency has to be used in order to express the size of the original capital fund, and quite naturally this foreign currency will mostly be the currency of the conquering or of the colonializing country. In this case, then, the simple rule that the currency in which the capital is expressed determines the currency in which the books are to be kept, is limited to such a time as no other currency is available; as soon, however, as the dependent country begins to have its own home currency, the rule breaks down. A decision has then to be made as to whether the business fund invested in the dependent country was meant to be a fund in terms of the then not yet existant, home currency of the dependent country or in terms of the original foreign currency. Obviously the test is the intention of the investors; in practice it probably will often not be easy to determine this intention unequivocally.

A practical example of such a situation is given in Israel. Until the occupation of Palestine by the English forces at the end of World War I, the Turkish Pound was the legal tender. From 1921 onward, Egyptian gold notes and the British gold sovereign concurrently replaced the Turkish pound as legal tender in Palestine. In 1927 the Palestine Pound (LP) was established as unit of currency, to be succeeded in 1948 by the Israel Pound (IL), with the effect that from 1928 both Egyptian gold notes and British gold sovereigns ceased to be legal tender. Prior to this date a number of companies had been founded which of course expressed their share capital either in the Egyptian or in the British currency. For the benefit of these companies, the Companies Ordinance, 1929—which followed substantially the British Companies Act, 1929—provided in an amendment dated 1934, that the general rule under which the share capital of a Palestinian Limited Company should be expressed in terms of the Palestine currency, should not apply to companies registered prior to the Ordinance in a currency other than the Palestine currency.

The consequence was that, when the Palestine Pound became sole legal tender in 1928, companies founded prior to this date with share capital in a foreign country, had legally three choices. They could convert their original share capital from the Egyptian or British currencies into the new Palestinian currency; or they could continue to present the accounts entirely in terms of their original currency, thereby proving themselves a foreign company trading in Palestine; or they could present their accounts in terms of the new home currency without changing the legal form of the share capital.

This third way required a particular form of presentation of the share capital on the face of the Balance Sheet. A company with a share capital in £ sterling for instance would commonly use the following form of presentation:

Liabilities	£	LP.
Share Capital		
Authorized		
50 Preference Shares of £1.– each............	50.–.–.	
50 Ordinary Shares of £1.– each...........	50.–.–.	
	100.–.–.	
Issued and fully paid up		
50 Preference Shares of £1.–.–. each..		50.-
50 Ordinary Shares of £1.–.–. each...		50.-
		LP. 100.-

All three solutions have been used in Palestine. Throughout the mandatory

time the difference between them was of rather academic interest, as the value of one LP was automatically equal to the value of one pound sterling. Matters changed, however, when shortly before the end of the mandate, Palestine was excluded from the sterling area. It now became a possibility, and very soon a fact, that the value of the home currency could differ from the foreign currency. For the companies which had chosen the first or the second alternative of presenting their accounts, this did not pose new problems. But for the companies in the third group—those with a presentation of the accounts in terms of LP, but with a share capital expressed e.g. in terms of pound sterling—new and unusual questions came up; particularly so, when the share capital was composed of classes of share-holders with different rights.

Such a company may find itself in one of two positions. Either it may discover that it chose in 1928 the wrong procedure when it crossed over to presenting its accounts in terms of LP instead of pounds sterling. As throughout the years after 1928, there has been no material difference between the two ways of presenting the accounts, the mistake was not realized earlier; it may therefore now be corrected by expressing the balance sheet in terms of pounds sterling and by treating the loss caused by the devaluation of the Israel Pound to one half of its former par[1] in accordance with the accepted accounting principles. Whether or not this interpretation is correct is a question of fact; it depends on the original intention of the shareholders. It must, however, be said that the mere fact that the shareholders acquiesced over so many years to a presentation of their share capital and of their business as a whole in terms of the new currency is weighty prima facie evidence to the contrary.

The alternative position is that it was correct to present the balance sheet in terms of Palestine or Israel pounds. In that case, however, a rule must be established for the proper conversion of the share capital from pound sterling into Israel pounds; particularly so, if the rates of exchange are currently fluctuating. In addition, there must be understanding of the meaning of a share capital expressed in a foreign currency. Obviously this is an unusual situation in which the established accounting principles do not give guidance.

In order to answer the question as to the proper rate of exchange for the share capital we have to realize the legal implications of a presentation of the balance sheet in terms of the Israel home currency when the share capital is expressed in a foreign currency. What it in fact means is that "Pound Sterling" is only a unit of account and does not of itself signify any particular value; it does not gauge the absolute size of the firm's obligation towards the shareholders, but it rather defines the relative position among shareholders and the method of performing the obligation. That such an interpretation is lawful, has repeatedly been maintained by the courts. It has for instance been held that a debt incurred under a contract in terms of one currency may be discharged by an appropriate number of the units of accounts of another currency which is legal tender at the place of the payment.

The accountant will gladly leave in the hands of the legal profession the difficult task of determining the mutual rights of the parties concerned. His part is only to express an opinion on the "appropriate number" of the units of accounts of another currency or in short on the proper rate of exchange.

In this respect, is has been argued, that

[1] The particular problems caused by the fact that Israel has multiple rates of exchange do not concern the problem discussed in this article. For simplicity's sake, only the so-called rate "B," of IL 1.—equals £-. 10.— will be used in the present argument.

the rate of exchange should be the rate prevalent at the date of the balance sheet. One reason therefore was that new shares to be allotted after the devaluation would require the payment of the consideration in terms of the local currency at the rate of exchange prevalent at the date of the allotment in order to maintain a *pari passu* position among the old and the new shareholders. From this it was concluded that the current rate of exchange is the decisive one.

This argument is wrong on two grounds.

First, from an accounting point of view, the result would be that the amount of the share capital would fluctuate in the balance sheet from year to year in accordance with the current rate of exchange. This runs counter to the basic principles of accounting, for limited companies, according to which all values may vary on the face of the balance sheet except the book value of the issued share capital. A share capital fluctuating in terms of constant values of assets and liabilities would make most accounting conventions inapplicable and would render the balance sheet next to meaningless.

Secondly, from a legal point of view, the argument of the allotment of new shares at the current rates of exchange begs the whole question. For the argument is sensible only if the symbol pound sterling expresses an obligation in pound sterling. In that case, however, the balance sheet should have been drawn up in terms of pound sterling with the consequence that the problem of a conversion of the capital would not come up at all.

These considerations, I think, rule out the use of the current rate of exchange for the conversion of share capital on the face of the balance sheet; and not only of the current rate, but also of any other variable rate of exchange such as an average rate or the like.

The alternative is to use a fixed rate applicable for all future balance sheets. But which rate should this be? Seeing that share capital is akin in many respects to long term liabilities, it is tempting to look for a rule analogous to that for long term liabilities. This would mean that share capital paid in prior to the creation of the home currency should be converted at the rate of exchange in force on the date of the introduction of the home currency in 1927, and share capital paid up thereafter at the rate of exchange on the date of payment. Though this rule appears to be consistent from an accounting point of view, it is open to the same legal argument which we just met in the case of the fluctuating rate. By implication, the rule makes a share expressed in terms of pound sterling into an obligation worth pound sterling. If, however, the symbol of "£ Sterling" had only the force of a unit of account, the logical consequence must be that from the date of the introduction of the new home currency onward, the unit of account of "one £ Sterling" is to be read as meaning "One of legal tender in the home currency" which means, in other words, as the equivalent of one LP or one IL. Even shares newly issued after the devaluation have then to be paid up at the rate of exchange of IL.1.– = £Stg.1.– without regard to the fact that the official rate of exchange differs at the time of payment.

Accordingly, the rule for the conversion of the share capital is that the rate of exchange prevalent on the date of the introduction of the home currency, substituting the formerly used foreign currency, is the rate to be used in all future transactions, without regard to the actually current rate of exchange.

If this is the correct answer, two incidental questions are automatically solved thereby. Firstly, suppose a preference share, expressed in pounds sterling, has preferential right to a dividend of 5% p.a.; does this mean 5% of one pound

Sterling or 5% of one IL? If the first alternative is correct the consequence is that, after a devaluation of the IL to one half, an effective dividend of 10% in terms of IL becomes payable; and should the devaluation proceed further, correspondingly higher dividends in terms of the local currency would become due until the point is reached where all income of the company would be completely swallowed up by the service of the preference shares. The effect of devaluation would be to oust the ordinary shareholders.

If, however, the symbol "£ Sterling" stands since 1928 for LP or IL, the preferential rights will have to be measured in terms of the home currency without an alteration of the mutual rights of the shareholders in consequence of fluctuations in the rate of exchange. Devaluation would then have no effect on the mutual relations of the shareholders.

The second conundrum is how to express properly on the face of the balance sheet any change in relationships of the various classes of shareholders. Even if, for the reasons already stated, the total of the share capital was maintained at the original book figure, the subdivision of this total among the shareholders would be altered by a change in the rate of exchange. As the balance sheet has to give a fair and true view of the company's affairs, this change requires expression on the face of the balance sheet. But how can this be done? Should one, for instance, write in the above example:

Share capital		
Issued and fully paid up:		
50 Preference Shares	50.–	
Add: currency gain (say)	40.–	90.–
50 Ordinary Shares	50.–	
Less: Currency loss (say)	40.–	10.–
		100.–

Obviously such a construction would involve, to say the least, a very unorthodox means of expression. Under the rule suggested above, such difficulties are avoided. The relative position of the shareholder is not affected by subsequent fluctuations of the rate of exchange and the accountant need not tamper with the structure of the share capital.

To sum up the argument—the rules that all assets and liabilities in foreign currency are to be converted into the currency of the share capital has one exception in the case in which the share capital was for technical reasons, expressed in a currency different from that in which it was intended to be invested. In that case, the balance sheet is to be expressed in the intended currency as soon as this becomes technically possible and the share capital from that date onward, must be converted into the intended currency at the rate of exchange in force at the date on which the conversion became first possible.

LIST OF RESEARCH PROJECTS IN ACCOUNTING: 1952-1953

RALPH COUGHENOUR JONES
Director of Research

SINCE relatively few doctors' or masters' theses are published, most of the studies listed here are not readily available. It is often possible, however, to get unpublished theses on inter-library loan. University libraries, moreover, can usually supply photostatic copies at 25 to 50 cents a page and some of the larger institutions can provide microfilm reproductions at 4 to 6 cents per exposure, usually one page of typewritten material. Precautions taken to protect copyrights may make it necessary to get the author's written consent before any material will be released. Anyone interested in a particular study should write to the school, the library of the school, or the author in care of the school in which the work was done.

Titles are listed by subject under the headings tabulated below. Each thesis appears only once although a number of them might logically be classified under two or more headings.

SUBJECT CLASSIFICATION

I. THEORY OF ACCOUNTING

A. INCOME DETERMINATION

Doctors

Accounting Aspects of Executive Stock, Options, Daniel L. Sweeney, *University of Michigan* (In Progress)

Relevance for Income Determination and Managerial Decision of Periodic vs. Product Assignment of Enterprise Costs, William J. Schrader, *University of Washington* (In Progress)

Masters

Accounting Bases for the Recognition of Revenue, John Harry Bonnar, *University of Illinois*, 1953

Recent Concepts of Business Income, (Miss) Boonsom Suwanaadth, *Ohio State University*, 1953

B. PRICE LEVEL CHANGES

Doctors

Adjustments for the Unstable Dollar in Accounting Data, Virgil Boyd, *Northwestern University*, (In Progress)

Changing Prices and Financial Reports, Donald A. Corbin, *University of California* (In Progress)

Evaluation of the Usefulness of Historical Cost in

Accounting, Clarence Leo Dunn, *University of Illinois*, 1953

The Significance of the Effect of Price Level Fluctuation on Accounting Data, B. F. Aschbacher, *University of Illinois* (In Progress)

Masters

The Adjustment of Depreciation Charges to Give Recognition to Price Level Changes, Ben Lawrence Forbes, *Louisiana State University*, 1952

Depreciation Accounting in Periods of Fluctuating Price Levels, Robert B. Sweeney, *The University of Texas*, 1953

The Effect of Inflation on the Capital and Profits of Electric Utilities, Gordon R. Hankins, *Washington University (St. Louis)*, 1953

Price Level Accounting and the Replacement Cost Controversy, Stanley Kwestel, *University of Pennsylvania*, 1953

Problems in Accounting for Fixed Assets in Periods of Changing Price Levels, Bertrand Rubin, *College of the City of New York*, 1953

A System of Accounting for Depreciation and Repair Cost for the Brewing Industry in Periods of Monetary Fluctuation, Frederick H. Brenner, *Saint Louis University*, 1953

C. FIXED ASSET VALUATION AND DEPRECIATION

Masters

Accounting for Leases and Leaseholds, Morris Webster, *University of Washington*, 1953

Appreciation of Fixed Assets, William George Tudor, *Southern Methodist University*, 1953

The Case for a Current Cost Basis of Fixed Asset Valuation and Profit Determination, John P. Freedman, *University of Pennsylvania*, 1953

Depreciation on a Current Basis, George Hamilton Warner, *The Johns Hopkins University*, 1953

Depreciation on Original Cost as Opposed to Depreciation on Replacement Value, Richard Marshall, *College of the City of New York*, 1953

The Influence of Monetary Fluctuations on Accounting for Fixed Assets, J. J. Kempner, *University of Colorado*, 1952

D. OTHER

Faculty

An Investigation into Certain Aspects of the LIFO Method of Inventory Valuation, M. J. Gordon and T. M. Hill, *Massachusetts Institute of Technology* (In Progress)

The Retail Inventory Method and LIFO, Malcolm P. McNair and Anita C. Hersum, *Harvard Business School*, 1952

Doctors

Accounting Characteristic Related to Economic Thought, Kenneth Wilbur Perry, *University of Illinois*, 1953

An Analysis of the Traditional Accounting Treatment of Deferred Charges, James M. Owen, *Louisiana State University*, 1953

Approaches to Uniformity in Accounting for Industrial Enterprises, David Hsiang Fu Li, *University of Illinois*, 1953

A Comparison of Accounting Concepts and Standards Expressed in a Selected Group of College Textbooks with Other Current Literature, Lincoln Jay Harrison, *Ohio State University*, 1953.

Criteria for Judging Materiality in Accounting, Samuel M. Woolsey, *The University of Texas* (In Progress)

Financial Accounting Standards, L. H. Jordan, *Columbia University*, 1953

The Influence of Tradition in Accounting, Arthur Ramer Wyatt, *University of Illinois*, 1953

Social Accounting: The Use of a System of Double Entry Accounts for the Presentation of Aggregate Data Concerning the National Economy, Donald F. Goss, *University of Michigan* (In Progress)

A Summary and Evaluation of Selected Terms of Variable Usage in Financial Accounting, Frank W. Singer, *Indiana University* (In Progress)

Wartime "Twilight" Reserves in Industrial Accounting: Their Background and Uses, Catherine E. Miles, *University of Alabama*, 1953

Masters

The Accounting Acceptability of Intangible Asset Values, Phillip Ray McDermitt, *University of Illinois*, 1953

Accounting for Stock Dividends and Stock Splitups, John E. Cashdollar, *Ohio State University*, 1953

The Applicability of the Proprietary Theory of Accounting to the Modern Corporation, Robert Keith Jaedicke, *University of Washington*, 1953

Contingent Liabilities, Russell Ferrington, *Louisiana State University*, 1953

The Evolution of Corporate Net Worth, Elton, John Cooper, Jr., *University of Alabama*, 1953,

A Systems Survey of Accounting Payables, Joseph E. Sinclair, *Louisiana State University*, 1952

II. HISTORY OF ACCOUNTING

Doctors

British Backgrounds of American Accountancy,

Vernon K. Zimmerman, *University of Illinois* (In Progress)

G. C. Harrison's Contributions to Cost Accounting, Vernon H. Upchurch, *The University of Texas* (In Progress)

Some Significant Developments of Public Accounting in the United States, James Donald Edwards, *The University of Texas*, 1953

Masters

The History of Accountancy, Sidney Gordon, *College of the City of New York*, 1953

A Study of George O. May's Contributions to the Accounting Profession, Alfred C. Hart, Jr., *Long Island University*, 1953

III. REPORTS AND STATEMENTS

Doctors

Financial Statements as Instruments of Communication to the Public, Max A. Binkley, *University of Illinois*, 1953

Labor Union Use of Corporate Financial Statements and Related Data, Wilbur Pillsbury, *Indiana University*, 1953

A Reformulation of the Theory of the Application of Funds Statement, Howard M. Daniels, *The University of Texas* (In Progress)

Reporting Foreign Operations, Samuel R. Hepworth, *University of Michigan* (In Progress)

A Study of Notes to Financial Statements in Corporate Annual Reports, T. G. Secoy, *University of Illinois* (In Progress)

Weekly Federal Reserve Statement: Its History and Significance, Richard J. Bannon, *Catholic University of America*, 1953

Masters

Accounting Ratios in Preferred Stock Contracts, 1947–1951, Marvin H. Lewis, *University of California*, 1953

An analysis of the Annual Reports of the Johns-Manville Corporation in the Light of Adequacy as a Financial Report to Stockholders, Walter B. Fleming, *Tulane University*, 1953

The Development and Present Status of Corporate Disclosure, Kimball J. Sorenson, *University of Oregon*, 1953

Financial Statement Analysis of Companies Doing Business with Government, Arthur Sheppard, *College of the City of New York*, 1953

The Use of Visual Material in Corporate Annual Reports, Clark MacMullen, *University of Pennsylvania*, 1953

IV. PUBLIC ACCOUNTING

A. AUDITING

Doctors

The Use of the Poisson Distribution by the Auditor, Marvin Tummins, *Louisiana State University*, 1953

Masters

Application of Scientific Sampling to the Verification of Extensions and Footings of a Retail Inventory, Leon E. Lee, *University of Kansas*, 1952

Auditing of Machine Kept Records, Paul E. Cohan, *College of the City of New York*, 1953

Auditing Techniques as Aids in the Detection of Fraud, Ira F. Aldridge, *College of the City of New York*, 1953

Evolution of the Auditor's Certificate, Donald C. Owen, *The University of Texas*, 1953

The External Auditor's Reliance on Internal Auditing, Ray Duane Barr, *University of Illinois*, 1953

Statistical Sampling in Auditing, Frank H. Whitehand, *Northwestern University*, 1953

A Suggested Audit Program with the Income Statement Approach, Eduardo C. Gopez, *Northwestern University*, 1953

Written Representations by Clients and Third Parties to Auditors, Eli Phillips, *College of the City of New York*, 1952

B. PROFESSION OF ACCOUNTING

Doctors

Legal Liability of Public Accountants, Roland F. Salmonson, *University of Michigan* (In Progress)

Social Responsibilities of Public Accountants, Gerald David Brighton, *University of Illinois*, 1953

Masters

Ethics—Importance and Current Status in the Accounting Profession, Emil Heikkinen, *Hofstra College*

Ethics in the Accounting Profession, Martin Santer, *College of the City of New York*, 1953

Liability of the Public Accountant at Common Law, Jack O. Spring, *Southern Methodist University*, 1953

C. OTHER

Research Bureau

The Use of Independent Accountant's Reports in Texas Banks, C. Aubrey Smith, *The University of Texas*, 1952

Doctors

An Analysis of the Examination and Other Requirements for the Certified Public Accountant Certificate, Heimie Edward Breen, *University of Illinois*, 1953

Masters

Accounting for Small Business, Reuben R. Abrams, *College of the City of New York*, 1953

Forensic Accounting: The Accountant as an Expert Witness, Max Lourie, *College of the City of New York*, 1953

An Inquiry into the Role of the Accountant in Labor Management Negotiations, Julius Cayson, *College of the City of New York*, 1953

An Investigation into Possible Increased Service to Small Business by the Public Accounting Profession, Milford K. Kellogg, *University of Washington*, 1952

Public Accountancy in Hawaii, Hideo Uto, *University of California*, 1953

Public Accounting Service for Small Business, Stanley Finkelstein, *College of the City of New York*, 1953

A Study of the Applications for and the Results of the Certified Public Accountant Examination in the State of Oklahoma, Clifford E. Hutton, *Oklahoma A. and M. College*, 1953

V. ACCOUNTING FOR INDUSTRIAL, MERCANTILE, AND FINANCIAL ENTERPRISES

A. ACCOUNTING SYSTEMS

Doctors

Accounting for the Finding, Production, and Processing of Natural Gas, Ishmael Eugene McNeill, *The University of Texas*, 1953

Petroleum Refinery Accounting, Charles Henry Griffin, *The University of Texas*, 1953

Uniform Accounting Methods for Indiana Canning Industry, Ralph D. Swick, *Indiana University* (In Progress)

Uniform Accounting Systems, Walter Stanley Palmer, Jr., *Stanford University* (In Progress)

Masters

Accounting for Accounts Receivable, Jesse Hubert Morris, Jr., *Louisiana State University*, 1953

Accounting for Construction Contractors, Robert McRae, *Louisiana State University*, 1953

Accounting for Group Medical Practice, Frederick Rosenberg, *College of the City of New York*, 1953

Accounting for "Joint-Interest" Operations in the Oil Industry, William Sherman Cooper, *Southern Methodist University*, 1953

Accounting for Labor Escalation in the Construction Industry, Rousseas, *College of the City of New York*, 1953

Accounting for the Metal Mining Industry, Albert J. Lindenstadt, *College of the City of New York*, 1953

Accounting for Mortgage Investment Companies, Joseph H. Watson, *College of the City of New York*, 1952

Accounting for the Unitization of Oil and Gas Leases, Carl F. Smith, *University of Tulsa*, 1952

An Analysis of the Method of Accounting for Bottles and Cases by the Seven-Up Bottling Company of Saint Louis, Missouri, John O. Nieman, *Saint Louis University*, 1953

A Case Study of the Accounting Procedures of a Department Store, Harry Goodman, *The University of Texas*, 1953

A Case Study of the Accounting Systems for Lease Revenues and Operating Expenses in Three Small South Texas Oil Producing Corporations, Ralph Jentsch, *The University of Texas*, 1953

A Critical Evaluation of the Recent Changes in Fire Insurance Company Accounting with Particular Emphasis on New York Uniform Accounting Regulation 30, Avrum H. Stolnitz, *University of Pennsylvania*, 1953

Direct Insurance Agency Accounting, Robert Katz, *College of the City of New York*, 1952

An Effective Accounting System for a Small Candy Manufacturer, James W. Johnson, *Tulane University*, 1953

Payroll Accounting, Harold Moskowitz, *College of the City of New York*, 1953

Some Simplified Systems of Accounting for Small Business, Joseph Abelow, *College of the City of New York*, 1953

The Timekeeper as Coordinator of Payroll Procedure and Collective Bargaining Agreements, Michael J. Harman, *University of Pennsylvania*, 1953

Uniform Account Classification for Dental Laboratories, Julius Willa, *University of Pennsylvania*, 1953

B. BUDGETING

Doctors

Retail Costs and Budgeting, Neil K. Alexander, *The University of Texas* (In Progress)

The Use of Variable Budgeting as a Device for Management Planning and Control in the Machine Tool Industry in Northeastern United States, John Tse, *Harvard Business School* (In Progress)

Masters

Budgetary Control, An Aid to Management, John McHugh, *College of the City of New York*, 1953

Budgetary Control for Owner-Operator Motor Carriers, Leon Joseph Myers, *Washington University (St. Louis)*, 1953

A Comparative Analysis of the Basic Features of Fixed and Variable Budgeting, Marvin E. Gollob, *Northwestern University*, 1953

C. COST ACCOUNTING

Doctors

Accounting Aspects of Fringe Wage Payments, Robert E. Seiler, *University of Alabama*, 1953

Accounting for Spoilage, Harold E. Paddock, *The University of Texas* (In Progress)

Differential Cost Accounting, Paul LeMoyne Noble, *Ohio State University*, 1952

Direct Costing, Daniel C. Lewis, *Harvard Business School* (In Progress)

Lumber Costs with Special Attention to Arkansas Furniture Companies, Nolan E. Williams, *The University of Texas* (In Progress)

Relevance of Bases for Cost Allocation, William Joseph Schrader, *University of Washington* (In Progress)

Standard Costs and Price Fluctuations, Gerald Kenneth Nelson, *University of Illinois*, 1953

Masters

An Application of Direct Costing Techniques to Cost Accounting for Local Cartage Companies, William J. Schroeder, Jr., *Tulane University*, 1953

Aspects of Direct Charge Costing, Hubert Harvey Hannah, *Ohio State University*, 1952

By-Product Costing for the Petroleum Refining Industry, Charles Berlowitz, *College of the City of New York*, 1953

A Case of Statistical Standard Cost Techniques Involving an Incentive Wage Plan, William A. Calman, *Hofstra College*

A Case Study: The Application of a Uniform Cannery Cost System in X Company, R. William Stewart, *University of California*, 1953

The Collection and Classification of Gray Iron Foundry Costs, Clifford Campbell Harris, *Temple University*, 1953

Cost Accounting for Hospitals, Gwendolyn Potter, *University of North Carolina*, 1953

Cost Accounting for Petroleum Products, Irving Nussbaum, *College of the City of New York*, 1953

Cost Control in Industrial Construction, Joseph S. Shapiro, *College of the City of New York*, 1953

Cost Control Methods in Paper Bag Manufacturing, David Golden, *College of the City of New York*, 1953

Cost Estimates: Their Preparation and the Part Played by the Accountants, Stuart Stein, *University of Pennsylvania*, 1953

Determination of Product Cost in the Ethical Drug Industry, Louis William Gilmore, *Temple University*, 1953

Direct Costing, John Francis Brophy, *Ohio State University*, 1953

An Evaluation of Inventory Control and Obsolescence Protection Methods in a National Automotive Parts Association Warehouse, Stanley O. Robert, *Tulane University*, 1953

Fringe Labor Costs, Walter Richard Krause, *Ohio State University*, 1953

Prime Costs (A Study of the Elements Comprising Direct Labor and Direct Materials), Rudolph Nieto, Jr., *Louisiana State University*, 1953

Problems of Cost Allocation in the Beet Sugar Industry, Robert E. Arentsen, *University of California*, 1953

D. CONTROLLERSHIP AND MANAGERIAL ACCOUNTING

Doctors

Accounting Reports for Financial and Operating Management, Jim G. Ashburne, *The University of Texas*, 1953

Managerial Costs, Philip T. Meyers, *The University of Texas* (In Progress)

Masters

The Controller's Contribution to Informed Pricing, Joseph William Bachman, *University of Illinois*, 1953

The Role of the Controller in Modern Business Management, Franklin A. McGee, *College of the City of New York*, 1953

The Variable Budget as a Means of Managerial Control, William H. Endy, *Louisiana State University*, 1952

E. INTERNAL AUDITING AND CONTROL

Masters

Application of Generally Accepted Principles of Internal Control to Small Business, Robert LeRoy Kram, *University of Colorado*, 1952

An Internal Auditing Program—Its Nature, Development and Organization, Raymond E. Young, *University of Pennsylvania*, 1953

Internal Check Methods for Cash and Sales, Melvin T. Sachs, *College of the City of New York*, 1953

The Internal Control and Internal Auditing Program for Cash and Related Items in a Commer-

cial Bank, Gustavo Vasquez-Mares, *University of Pennsylvania*, 1953

Internal Control of Current Assets in Department Stores and Ready-to-Wear Chains, Michael Goldstein, *College of the City of New York*, 1953

F. CASE AND INDUSTRY STUDIES

Faculty

Banking System Study, Robert Gregory and others, *Massachusetts Institute of Technology* (In Progress)

Management Controls in Industrial Research Organizations, Robert N. Anthony, assisted by John S. Day, *Harvard Business School*, 1952

Doctors

Accounting Principles Underlying Leasehold, Exploration, and Development Costs in the Petroleum Industry, Horace R. Brock, *The University of Texas* (In Progress)

Evaluation of Accounting Practices in the Petroleum Industry, Frank J. Lauderdale, *The University of Texas* (In Progress)

Masters

The Accounting, Tax and Auditing Problems of the Construction Industry, William Earl Rice, *Ohio State University*, 1953

An Analysis of the Sources and Applications of Funds in the Four Meat Packing Companies in the United States 1942 through 1951, Albert Kasdin, *University of Pennsylvania*, 1953

A Case Study of the Accounting Problems of a Medium Size Hardware Store, William McGuffey Hepburn, Jr., *University of Alabama*, 1953

Changes in the Net Worth Section of the Balance Sheet of Ten Leading Limited Price Variety Stores, Edmund C. Pezalla, *Catholic University of America*, 1953

Income Determination for the Oil Production Industry, Clifford Earle Ludwig, *Northwestern University*, 1953

The International Harvester Company: A Discussion of the Growth of the Company and the Effect of this Growth on Accounting Procedures, Dean A. Olsen, *University of California*, 1953

A Study of Corporate Fund Requirements for a Telephone Company, James Borell Griffith, *Temple University*, 1953

Unearned Finance Charges—A Study in the Realization of Income for Sales Finance Companies, Robert F. Polson, *Northwestern University*, 1953

G. OTHER

Doctors

The Accounting Aspects of Industrial Pension Plans, Paul Emmet Fertig, *Ohio State University*, 1952

Masters

An Analysis of the Accounting Aspects of Industrial Research and Development, James W. Torrey, *University of Pennsylvania*, 1953

Applications and Examples of Microfilming Methods, Henry S. Banks, *Northwestern University*, 1953

The Development of the Science of Cybernetics and Its Application to Industry, Patrick J. Reddin, *Louisiana State University*, 1952

Electronic Computers in Accounting and Business, William R. Elmendorf, *University of Colorado*, 1953

Punched Card for Payroll Accounting, Dorothy Cunningham, *Louisiana State University*, 1953

The Use of Accounting Machines as Cost Saving Devices, Frank J. Stass, *Tulane University*, 1953

VI. NON-PROFIT ENTERPRISES

Faculty and Research Bureau

Accounting Procedures Manual for Tennessee Municipalities, W. H. Read and W. T. Chaffin, *The University of Tennessee* (In Progress)

Income Estimates for Louisiana Parishes 1947–1950, Gardner M. Jones, *Louisiana State University*, 1952

Statement of Accounting Standards for Tennessee Municipalities, W. H. Read and W. T. Chaffin, *The University of Tennessee* (In Progress)

Doctors

Accounting Reports of Fiduciaries, Leon E. Hay, *University of Illinois* (In Progress)

An Accounting System and Audit Program for Georgia Counties, Homer A. Black, *University of Michigan* (In Progress)

Administration of Purchasing Function in State Government, Edward S. Lynn, *The University of Texas* (In Progress)

Development of Proposed Church Accounting Procedures, Emerson Henke, *Indiana University*, 1953

Masters

Accounting and Administration of Decedents' Estates in California, James Peirano, *University of California*, 1953

An Approach to a Cost Analysis of the Operation of U. S. Coast Guard Vessels, Edward D. Scheiderer, *University of Pennsylvania*, 1953

Budgeting Developments in Tennessee 1937 to 1953, John H. Johnson, *The University of Tennessee*, 1953

A Critical Analysis of the Cost Accounting System Employed at the Coast Guard Yard, Robert M. Smith, *University of Pennsylvania*, 1953

The Development and Integration of Generally Accepted Accounting Standards to Governmental Accounting, Charles C. Semple, *University of Pennsylvania*, 1953

Managerial Control and Accounting for U. S. Governmental Fiscal Operations, Melvin Bund, *College of the City of New York*, 1953

Municipal Cost Accounting, Kenneth Z. Miller, *The University of Texas*, 1953

VII. LEGAL AND GOVERNMENTAL ASPECTS OF ACCOUNTING

A. TAXATION

Doctors

Accounting, Financial and Economic Implications of Section 102 IRC., Elton Tekolste, *University of Michigan* (In Progress)

Amortization of Emergency Facilities, Robert G. Falls, *Indiana University* (In Progress)

Federal Income Taxation of Savings and Loan Associations, Charles H. Spencer, *Indiana University*, 1953

The Impact of Federal Taxation upon the Methods by Which the Use of Real Estate is Acquired by Commercial Enterprises, George Nunn, *Indiana University*, 1953

The Impact of Federal Taxes on Real Estate Developers, Donald E. Roark, *Indiana University* (In Progress)

Long-term Net Leasing Practice—Problems of Taxation, Finance, and Accounting, Albert H. Cohen, *University of Michigan*, 1953

Tax Planning for Oklahoma Estates, Othel D. Westfall, *The University of Texas*, 1953

Masters

Accountant's Role in Tax Practice, Arthur Susswein, *College of the City of New York*, 1952

Accounting for Income Taxes under Accelerated Amortization of Emergency Facilities as Advocated in Accounting Research Bulletin #42, Carl Wilson Thomas, *Ohio State University*, 1953

The Amortization of Emergency Facilities, Robert L. Gable, *University of Maryland*, 1953

Critique on Capital Gains Legislation in the U.S., Myron Greenberg, *Temple University*, 1953

Deductions Allowed for Estate and Inheritance Taxes: Comparison Between the Federal and New York State Laws, Jacob Lefkowitz, *College of the City of New York*, 1953

Determination of Fair Market Value of Securities for Tax Purposes, Robert B. Otto, *College of the City of New York*, 1953

The Determination of Reasonableness of Corporate Salary Deductions for Income Tax Purposes, Dudley A. Tremble, *University of Pennsylvania*, 1953

Effects of Taxation: Working Capital Position of Corporations, Carl A. Alexander, *University of California*, 1953

Family Partnerships—Showing the Effect of the Culbertson Decision on the Attitude of the Courts toward the Taxpayer, Samuel M. Watson, *University of Pennsylvania*, 1953

Federal Income Tax Aspects of Manufacturing Inventory Accounting, Robert Eugene Maurath, *Ohio State University*, 1952

History and Development of Net Operating Loss Deduction in Federal Income Taxation, Henry Alton Davis, Jr., *University of Alabama*, 1953

The Last-in First-out, Cost or Market Inventory Method as Proposed by H. R. 235, Victor Walcoff, *University of Pennsylvania*, 1953

LIFO and Its Application to the Retail Inventory Method, Cyril C. Anderson, *Hofstra College*, 1953

Losses Not Deductible Under the Federal Income Tax Law, Ernest Bergauer, *College of the City of New York*, 1952

The Reorganization of the Bureau of Internal Revenue—with Special Regard to Effects on the Taxpayer, Franklin J. Singer, *University of Pennsylvania*, 1953

Some Tax Problems in the Debtor-Creditor Relationship Between a Corporation and its Stockholders, W. Hugh Overcash, *The University of Tennessee*, 1952

Special Treatment of the Farmer in the Federal Income Tax Law, H. Lee Sturgeon, *University of Kansas*, 1953

State and City Tax Barriers to Foreign Corporations Operating in New York City and Philadelphia, Ruth Brown, *College of the City of New York*, 1953

Stock Dividends, Accounting and Tax Treatment, Charles Augustus Lindberg, *University of Illinois*, 1953

A Study of the Accounting and Other Methods Used by the Commissioner of Internal Revenue to Determine or Redetermine Taxable Income

of a Taxpayer, Lester Rosin Wheeler, Jr., *University of Illinois*, 1953

A Study of the Historical Development of Capital Gains Taxation in the United States, William Hideo Yamada, *Ohio State University*, 1952

The Valuation of Inventory as Affected by Federal Income Taxation, Carl Bierman, *College of the City of New York*, 1953

B. REGULATION

Masters

Accounting Aspects of Nationalization of Industry, Henry Lowenthal, *College of the City of New York*, 1953

Accounting Implications of the Elkins Act Consent Decree, Frank Tom Mitchell, *University of Pennsylvania*, 1953

A Comparison of the Uniform System of Accounts for Class 1 Motor Carriers of Property with Generally Accepted Accounting Principles, Ervin J. Castille, *The University of Texas*, 1953

Corporate Capital Impairment in Relation to Dividend Declarations under New York Law, Carl Avner, *College of the City of New York*, 1953

Do Price Controls Meet the Test of Accounting Standards?, Norman C. Grosman, *University of Pennsylvania*, 1953

The Influence of the S. E. C. on Financial Statements Issued by Management Investment Companies of the Open End Type, David M. Keeler, *University of Pennsylvania*, 1953

Some Effects of Regulation by the Securities and Exchange Commission upon Accounting and Auditing, Lewis H. Spivey, *The University of Tennessee*, 1953

C. CONTRACTS, CONTRACT RENEGOTIATION, AND OTHER

Doctors

Plant Facilities in a Defense Economy, David A. Thomas, *University of Michigan* (In Progress)

Masters

The Accountant's Role in Renegotiation, Russell Joseph Bacchi, *Temple University*, 1953

Accounting for Military Research Contracts in Colleges and Universities, Henry Piere Creed, *Temple University*, 1953

Contract Termination—Policies and Methods, William Zellmer, *Hofstra College*, 1953

A Critique of the Renegotiation Act of 1943—Its Provisions and Administration, Joseph Calvin Eischen, *University of Oregon*, 1953

Renegotiation of War Contracts, John Russell Glick, *University of Alabama*, 1953

A Study of the Cost Principles Underlying Audit of Claims Arising from Terminated War Contracts, E. Burl Austin, *University of Iowa*, 1952

VIII. REORGANIZATION AND LIQUIDATION

Doctors

Quasi-reorganization and Other Major Accounting Adjustments, James S. Schindler, *University of Michigan* (In Progress)

The Receivership and Reorganization of the Abitibi Power & Paper Company, Gilbert R. Horne, *University of Michigan* (In Progress)

IX. EDUCATION

Doctors

Accounting Education at the University Level, Harry Ralph Price, *Northwestern University* (In Progress)

Internship Programs in Accounting—An Analysis and Evaluation, Robert B. McCosh, *Indiana University* (In Progress)

Masters

Accounting Instruction on the Junior College Level, Greta S. Mortimer, *University of California*, 1953

Co-operative Training for Industrial Accountants, Robert R. Rodecker, *University of Pennsylvania*, 1953

An Evaluation of the American Institute of Accountants College Testing Program, Duane A. Hickman, *University of Colorado*, 1953

Some Methods of Applying Selected Principles of Learning to the Writing of Elementary Accounting Textbooks, William Gellerman, *University of Washington*, 1953

A Study of the Preparation of College Students for Public Accountancy, Michael Francis Grisafe, *Northwestern University*, 1953

ANNUAL REPORT

REPORT OF THE 1953 PRESIDENT

RUSSELL H. HASSLER

THIS HAS BEEN AN ACTIVE YEAR for the American Accounting Association. The times in which we live have brought new challenges to us as individuals and as a group. We have gone forward on many fronts to meet not only the objectives we have set out for ourselves but the responsibilities which we must assume.

In the President's Report for 1952, George R. Husband forcefully reminded us of the need for a soundly integrated educational foundation for progress in the development of the accounting profession as a vital part of our business and economic life. He reminded us of our obligation to maintain and improve the Association's position of leadership in the field of accounting education.

The work of the Association this year has been based upon the recognition that accounting education with all of its ramifications is the primary task of our group. As steps toward accomplishing this purpose we have reorganized our committee structure, expanded accounting research efforts and increased attention to Association publications.

Association activities have been carried on by many members, and in this report I shall not attempt to detail every specific effort by those willing and cooperative members who took part this year. I shall only try to highlight some of the activities which point the way along the path we have traveled. Our activities the past few years expose problems for the future course of the Association and in doing so they reveal some of the challenges of the future. The Association must be a vital force of leadership in developing and integrating accounting education and research within the widening responsibilities of the accounting profession. In charting our course for the future we must recognize that Association activities require a continuing direction much different from the yearly planning in which our primary goal is a stimulating and enjoyable annual meeting. Demands on us will increase if we are to continue the role we are now playing. This is our challenge—not only for the officers, and committee members, but for every member of the Association.

The Accounting Review

One of the most important facets of Association activity is THE ACCOUNTING REVIEW. It is only proper to give recognition to the fact that THE ACCOUNTING REVIEW has continued to grow both in stature and number of pages. Acknowledgement of the debt due those responsible for its publication is most appropriate. They are:

Frank P. Smith, Editor
Frank S. Kaulback, Jr., Teachers Clinic
Henry T. Chamberlain, Professional Examinations
E. Burl Austin, Association Notes
Arthur M. Cannon, Book Reviews
Charles J. Gaa, Subscriptions, Memberships, Advertising

Further the Association's appreciation is due to the many members whose writings have made the REVIEW possible.

Publications

The year 1953 was an active one from the viewpoint of Association publications.

The *Accounting Teachers' Guide* was published in the fall of 1953 by South-Western Publishing Co. This book was sponsored by the American Accounting Association and was developed by an Association committee under the chairmanship of Leo Schloss. Testimony of the in-

terest in this project is evidenced by the contribution of over fifty Association members to the preparation of the manuscript. The Association is indebted to the committee, contributors, and to the South-Western Publishing Co.

Structure of Accounting Theory by A. C. Littleton was also published by the Association as monograph number 5 in its monograph series, and it represents another step in making available to our members and others the fruits of research in accounting by leading members of our profession.

Cooperative efforts for publication of studies in other areas have been undertaken. Following a recommendation from the Committee on Education, negotiations are being conducted with the National Association of Cost Accountants looking toward publication under joint sponsorship of the two Associations of a book of readings in advanced cost accounting.

Price Level Changes in Financial Statements

As was mentioned last year a research study was commenced on the effect of price level changes on financial statements. The study is being financed by grants from the Merrill Foundation for Advancement of Financial Knowledge. The original grant of $15,000 was supplemented by a second grant of $20,000 during 1953, and it is expected that the research study will be completed by the summer of 1954. The project has been directed by Ralph C. Jones, the Association's Director of Research in 1953. Perry Mason joined the project in the fall of 1953 and worked with Professor Jones during the remainder of the year as Associate Director of the study. It is contemplated that during the first part of 1954 the Association will publish some of the results of the study. It is presently planned to publish one book containing an introductory statement of basic concepts and methods relating to price level changes in financial statements, together with two case studies of companies participating in the research project. At the same time a manual of procedures for use in preparing financial statements showing the effect of price level changes is to be published. A final study containing analyses of results, interpretations and recommendations is planned for publication during the summer of 1954. This entire research project represents a pioneering step on the part of the Association in conducting expanded research studies in areas vital to our economic life. Much credit is due to the unstinting and generous efforts of Ralph Jones and Perry Mason. We are indebted also to the participating companies and to their public accounting firms who gave generously of their time and attention.

Relationships with Other Organizations

As it should be, activities of this Association find their counterpart in other organizations, and it is a salutary condition to have many of our members in various types of activities working with members of other organizations.

During the year, the Association was represented at the annual meetings of the American Institute of Accountants, Controllers Institute, Institute of Internal Auditors and the National Association of Cost Accountants. A high light of the President's activity was attendance at the Spring Council meeting of the American Institute of Accountants. The association was also represented at a number of meetings of other groups during the year.

In accordance with action of the Executive Committee, the Association is participating with other accounting organizations in three joint activities. The Council for Professional Education for Business sponsored by the American Collegiate Schools of Business has as its purpose the promotion and improvement of business education. Past-president Hermann C. Miller

represented the Association at meetings of this Council. The Council for Federal Financial Administration has as its purpose the development and encouragement of improvement in federal government accounting and budgetary controls. Robert N. Anthony and Herbert F. Taggart represented the Association at the meeting of this Council. The Commission on Standards of Education, and Experience for C.P.A. has, as its name implies, the goal of improvement of standards of education and experience for the C.P.A. certificate. Several members of the Association have been active in the work of the Commission during its formative period in 1953.

Annual Meeting

The annual meeting of the Association was held at the School of Business Administration, University of North Carolina, Chapel Hill, North Carolina on September 1 and 2, 1953. The largest attendance at an annual meeting enjoyed fully the high standard of hospitality and planning provided by the Committee on Convention Arrangements and the Ladies Program Committee whose chairmen were Mr. and Mrs. Erle E. Peacock respectively. The host school was most gracious in every way toward making a success of the meeting.

Alpha Kappa Psi Award

The Alpha Kappa Psi award for 1953 made for outstanding contributions to the field of accounting was presented to William A. Paton. The award was presented to Mr. Paton by Edward G. Eriksen, member of the Grand Council of Alpha Kappa Psi at the annual meeting in Chapel Hill.

EXECUTIVE COMMITTEE

The administration of the affairs of the Association rest primarily in the hands of the Executive Committee, and to this end, the Executive Committee devoted its attention to the formulation of policy and a review of committee and financial operations. As mentioned earlier in this report, the Executive Committee gave consideration to a change in committee structure to further the educational objectives of the Association. Some of the actions of the Executive Committee have been reported elsewhere in this report; others which may be of interest are:

1. Accepted the invitation of the University of Pennsylvania to hold the 1955 meeting of the Association at that School. (The 1954 meeting is to be held at the University of Illinois.)
2. Approved the report of the subcommittee on regional meetings and authorized publication in THE ACCOUNTING REVIEW. (July 1953.)
3. Authorized preparation and publication of a full roster of membership. The roster was prepared as of September 30, 1953.
4. Authorized publication in THE ACCOUNTING REVIEW of the final report of the Standards Rating Committee. (January 1954 issue.)
5. Authorized withdrawal of the application for a grant of funds for a study in the field of national income.

COMMITTEE ON EDUCATION

Following the report of a subcommittee of the Executive Committee made in December 1952 a major Committee on Education was created. It was the plan of the Executive Committee that as areas of study were proposed, separate task committees would be formed to pursue these particular areas. Chairmen of the task committees were to be members of the major Education Committee.

The first year of operation of this new major committee, under Robert E. Walden as chairman, has shown much promise, and offers high hopes for future accomplishments. During 1953, task committees were created for Internship Programs, Visual Aids, C.P.A. Examinations, Selection of Personnel and Internal Auditing. As was hoped there were many areas of co-

operative work between members of these committees and other organizations. Part of the year was devoted to creating a concept of objectives and means of operation for future years. In addition specific tasks were undertaken, some of which are:

1. Proposal for joint sponsorship with N.A.C.A. of a book of readings in Advanced Cost Accounting, mentioned elsewhere in this report.
2. Assisted the American Institute of Accountants to evaluate its booklet "Professional Help Wanted."
3. Reviewed the booklet "The Field of Internal Auditing" for the Institute of Internal Auditors and assisted in arrangements for its distribution.
4. Worked toward expanding a Faculty Residency Program which will provide opportunities for faculty members to add to their experience by working in public accounting firms and in the industrial accounting and internal auditing departments of companies.

COMMITTEE ON ACCOUNTING CONCEPTS AND STANDARDS

This committee under Stewart Y. McMullen as chairman has tackled several extremely controversial problems during the year. According to its schedule, Supplementary Statement No. 5 "Accounting Corrections" is to be published under a December 31, 1953, dateline. The committee expects that Supplementary Statement No. 6 "Inventory Pricing" will be ready for publication during early 1954.

Possible statements for future publication on which work has been done are:

1. Consolidated Statements
2. Conservatism in Accounting
3. Standards of Disclosure

COMMITTEE ON COST ACCOUNTING CONCEPTS AND STANDARDS

The 1953 committee, under its chairman Lawrence J. Benninger, undertook the development of a broad outline of cost concepts covering the entire area of costs upon which the procedures of cost accounting and cost analysis are based. It was the plan of this committee that within such an outline or framework, work of the 1954 and subsequent committees would be devoted to preparation of specific statements on particular areas. Progress has been made toward the development of the outline looking toward defining problems for which cost concepts are needed.

COMMITTEE ON STANDARDS RATING

The Committee on Standards Rating, authorized in May 1948, submitted its concluding report to the Executive Committee as a result of a five-year study. The Executive Committee has authorized publication and the report appeared in the January 1954 issue of THE ACCOUNTING REVIEW and will be made available to colleges and universities throughout the country. The work of the committee was based on the belief that with the substantial growth in educational opportunities in the past, the time is opportune (1) to raise the quality of collegiate accountancy education and (2) to reduce the present educational disparities which exist in the several hundred United States colleges and universities offering instruction in this field. Hermann C. Miller has been chairman of the committee during the five-year period.

COMMITTEE ON NATIONAL INCOME ACCOUNTING

The work of this committee, under the chairmanship of Carl L. Nelson, was handicapped during the year through no fault of its own. In the early part of the year, plans were held in abeyance awaiting word on the Association application for funds for a research project in the area of National Income Accounting. Later when Foundation action on the application appeared unlikely for the immediate future it was withdrawn by vote of the Executive Committee.

COMMITTEE ON MUNICIPAL ACCOUNTING

The committee operates on a stand-by basis to serve in an advisory capacity to the National Committee on Governmental Accounting. Fayette H. Elwell was the committee's chairman.

COMMITTEE OF PREPARATION OF ACCOUNTING TEACHERS' MANUAL

As mentioned under *Publications* the *Manual*, renamed the *Accounting Teachers' Guide*, was published in the early fall. Copies were on display at our annual meeting, and were made available to members at no charge for paper backed copies. Leo Schloss served as chairman of the committee.

COMMITTEE ON REGIONAL MEETINGS SOUTHEASTERN GROUP

Since the annual meeting of the Association was held at the University of North Carolina, the Southeastern Regional Group, with Alton G. Sadler as chairman, did not hold a separate meeting. The Southeastern Regional Group held a breakfast meeting during the Association's annual meeting.

COMMITTEE ON NOMINATIONS

The committee's nominees were presented and elected at the Association's annual meeting in September 1953 in Chapel Hill, North Carolina. Sidney G. Winter served as the committee's chairman.

MEMBERSHIP COMMITTEE

Membership in the Association continues to grow, and at December 31, 1953, there were about 4,600 regular members. For the first time in several years, the number of associate memberships has taken an upturn, a most encouraging sign. The Membership Committee, under its chairman James S. Schindler, initiated the preparation of a roster of accounting instructors at colleges and universities throughout the country. Completion of the roster is anticipated in early 1954.

Your retiring president is grateful for having had the high honor of serving the Association as its president during the past year. In addition to gratitude for the honor must be added appreciation for the pleasure this year in office has brought. The work of the Association is made possible only through the unselfish efforts of its members. My sincere personal thanks go to the Executive Committee, other committee members, and those in the Association whose complete cooperation and constructive assistance have been invaluable. The opportunity of working with so many fine people, and of being a part of a vital, growing organization, has truly been a source of pleasure and reward.

American Accounting Association
Urbana, Illinois

AUDIT REPORT

For the Year Ended December 31, 1953

Filbey, Filbey & Beagle
Certified Public Accountants
Urbana, Illinois

REPORT ON EXAMINATIONS OF RECORDS

For the year ended December 31, 1953

Executive Committee
American Accounting Association
Urbana, Illinois

Gentlemen:

We have examined the balance sheet of the American Accounting Association as of December 31, 1953, and the related statements of income and expense and of changes in net worth for the General Fund and the Life Membership Fund for the year then ended. Our examination was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

Following past practice, inventories of Association publications are not included in the balance sheet. The costs of publication have been charged to operations in the year of printing.

In our opinion, the accompanying balance sheet and statements of income and expense and of changes in net worth present fairly the financial position of the American Accounting Association at December 31, 1953, and the results of its operations for the year then ended, in conformity with general accepted accounting principles applied on a basis consistent with that of the preceding year.

Respectfully submitted,
FILBEY, FILBEY & BEAGLE
Certified Public Accountants

AMERICAN ACCOUNTING ASSOCIATION

Exhibit A.—Consolidated Balance Sheet

December 31, 1953

Assets	*General Fund*	*Life Membership Fund*	*Combined Funds*
*Cash**	$ 8,891.62	($2,749.99)	$ 6,141.63
U.S. Savings Bonds, Series F			
Maturity Value	$17,400.00	$7,400.00	$24,800.00
Less Discount	3,229.40	468.00	3,697.40
Redemption Value	$14,170.60	$6,932.00	$21,102.60
Receivables			
Members' Dues	$ 11.50	$ —	$ 11.50
Miscellaneous	452.85	517.88	970.73
Total	$ 464.35	$ 517.88	$ 982.23
Less Estimated Uncollectible Accounts	12.45	22.91	35.36
Net Receivables	$ 451.90	$ 494.97	$ 946.87
Prepaid Expenses			
Prepaid Insurance, Stationery, Postage, Office Supplies and Forms	$ 476.17	$ —	$ 476.17
Office Equipment (at nominal value)	$ 1.00	$ —	$ 1.00
Total Assets	$23,991.29	$4,676.98	$28,668.27
Liabilities and Net Worth			
Accounts and Accrued Expenses Payable	$ 3,839.86	$ —	$ 3,839.86
Collections Received in Advance			
Members' Dues	$ 1,328.81	$ —	$ 1,328.81
Associate Members' Dues	1,551.05	—	1,551.05
Subscriptions	3,336.04	—	3,336.04
Total	$ 6,215.90	$ —	$ 6,215.90
Total Liabilities	$10,055.76	$ —	$10,055.76
Net Worth, December 31, 1953	13,935.53	4,676.98	18,612.51
Total Liabilities and Net Worth	$23,991.29	$4,676.98	$28,668.27

* The negative cash amount in the Life Membership Fund is not a bank overdraft; one account is maintained at the bank for both funds.

This exhibit does not include $175.00 of cash remaining from the Stans Foundation Grant. The original grant was $1,000.00 to be used to further the work of the *Committee on Accounting Concepts and Standards.*

AMERICAN ACCOUNTING ASSOCIATION

General Fund

Exhibit B.—Statement of Income and Expense

For the Year Ended December 31, 1953

Income			
Members' Dues		$22,140.68	
Associate Members' Dues		3,681.00	
Subscriptions to Accounting Review		5,560.63	
Sales of Publications		354.19	
Advertising		4,887.92	
Interest		336.60	
Miscellaneous		12.10	$36,973.12
Expense			
Printing and Mailing Expense:			
Accounting Review	$15,797.42		
Reprints	480.16		
Membership Roster	2,323.47	$18,601.05	
Travel and Meeting Expense:			
Executive Committee Meetings	$ 2,386.60		
President's Travel and Other Expense	653.86		
Other Officers' Expenses	354.88		
Committees:			
Accounting Concepts and Standards	2,072.66		
Accounting Teachers' Guide	455.66		
Cost Accounting Concepts and Standards	519.77		
Education	885.26		
Membership	505.80		
National Income Accounting	145.45		
Nominations	293.03		
Southeast Meeting	39.79		
Standards of Accounting Instruction	1,190.77	9,503.53	
Salaries*		5,050.16	
Honoraria		2,800.00	
Convention Cost (net)		1,583.12	
Office Expenses*		2,157.18	
Provision for Doubtful Accounts		—	39,695.04
Net Loss, 1953			$ 2,721.92

Changes in Net Worth

Balance, January 1, 1953		$16,672.40
Deduct:		
Adjustment for Net Expense Now Charged to 1952 Operations	$ 14.95	
Net Loss for 1953	2,721.92	2,736.87
Balance, December 31, 1953		$13,935.53

* See note on Exhibit C.

AMERICAN ACCOUNTING ASSOCIATION

LIFE MEMBERSHIP FUND

Exhibit C. Statement of Income and Expense

For the Year Ended December 31, 1953

Income		
Sale of Paton and Littleton Monograph	$1,270.14	
Sale of C.P.A. Booklet	69.64	
Sale of Index	30.00	
Sale of Littleton Monograph	442.70	
Life Membership Contributions	600.00	
Interest Income	223.00	$2,635.48
Expenses		
Printing Littleton Monograph	$3,970.97	
Storing, Mailing and Editorial Cost of Publications	427.35	
Salaries, Office Supplies, Stationery and Other Expenses*	377.94	
Provision for Doubtful Accounts	—	4,776.26
Net Loss, 1953		$2,140.78

Changes in Net Worth

Balance, January 1, 1953	$6,817.76
Net Loss for 1953	2,140.78
Balance, December 31, 1953	$4,676.98

* Salaries, office supplies, stationery and other expenses applicable to the office of the Association, together with the audit fee, were apportioned between the General Fund and the Life Membership Fund on the basis of the approximate ratio of the income of each fund to the total income of both funds.

THE TEACHERS' CLINIC

Frank S. Kaulback, Jr.

Editor's Note: Many of the experienced teachers, as well as some of the new ones have developed devices and techniques for the presentation of certain of the knotty aspects of accounting, and it is felt that such suggestions might well be made available to the other members of the teaching profession through *The Teachers' Clinic*. Accordingly, contributions are hereby invited. Please address all correspondence to Frank S. Kaulback, Jr., School of Commerce, University of Virginia, Charlottesville, Virginia.

NOTICE

The attention of the members of the Association is again drawn to the Faculty Residency Program (see article elsewhere in this issue). Those faculty members interested in employment for a semester up to a year with a public accounting firm, or for three months to a year with an industrial concern may indicate their interest by writing Frank S. Kaulback, Jr., 1197 University Station, Charlottesville, Va. stating their preferred geographic area; their preference as to public accounting, industrial accounting, cost accounting or internal auditing; the period for which they would be available; the minimum compensation they would expect; a brief statement of their technical background; and enclosing a photograph.

The Presentation of Errors in Valuation

Morton F. Moss
University of California, Berkeley

Beyond the first few weeks of the elementary course, too little emphasis is placed on the fundamental accounting equation. As a result the student threads his way through the first year of accounting at best understanding certain relationships in vacuo but probably in most cases accepting them on faith. He then proceeds to memorize these relationships and hopes that the examination situation will be sufficiently similar to the one he learned by rote so that he can cope with it.

Perhaps the ideal solution to this difficulty is one which places greater stress on the equation in the first course in accounting, but this probably would require a fundamental revision of course structure with the concomitant sacrifice of other worth-while materials. One result that follows from this lack of stress on the equation is the necessity to spend the first part of the second course in accounting on a general review of the basic accounting process. In this connection, we have, at the University of California (Berkeley), found that the best approach to the review portion is an intense concentration on the fundamental aspects of the equation. As a by-product of that emphasis, I have found that it is much easier to get across to the student both the nature and the treatment of errors of omission and commission. While we stress the proprietary approach, I have also found the following techniques to be workable in teaching from the entity viewpoint. My demonstration of the technique will assume the former.

The starting point is the presentation of the accounting equation at three successive periods of time:

	Assets	minus	*Liabilities*	equals	*Proprietorship*
Dec. 31, 1953	$120,000.00		$45,000.00		$75,000.00
Dec. 31, 1952	80,000.00		25,000.00		55,000.00
Dec. 31, 1951	60,000.00		20,000.00		40,000.00

The "proprietary" student is already familiar with the idea that (1) assets and liabilities in the equation referred to above are total assets and total liabilities the components of which are additive because money values can be assigned to each element, (2) assets and liabilities are the independent variables, (3) proprietorship is a residual derived from the value magnitudes assigned to assets and liabilities, (4) changes in proprietorship are derived from changes in assets and liabilities during the accounting period, (5) the determination of profit for the period requires additional information, specifically the additional investments and withdrawals, if any, made by the proprietors. Furthermore we assume initially that the values assigned to individual assets and liabilities at both the beginning and the end of the accounting period are correct.[1]

It we assume no further investments or withdrawals the profit for 1952, $15,000, is derived as follows.

	Assets	minus	*Liabilities*	equals	*Proprietorship*
Dec. 31, 1952	$80,000.00		$25,000.00		$55,000.00
Dec. 31, 1951	60,000.00		20,000.00		40,000.00
Changes (Profit)	$20,000.00		$ 5,000.00		$15,000.00

The same procedure would be used to demonstrate a profit of $20,000 for the year 1953.

Now we can relax the assumption that individual asset and liability magnitudes are stated correctly and examine four possible types of errors. One or more assets could be overstated and/or understated in terms of their correct value, or individual liabilities could be overstated and/or understated in terms of their correct value. To the extent that these individual errors are not offsetting within the area of total assets and liabilities, what I have assumed to be profit for each period will be affected.

At this point let us trace through the ramifications of a specific error on the profits of one year and then extend the demonstration to the second year. Assume that prepaid property tax in the amount of $100 has been omitted at the end of 1952 and that error is not discovered until the end of 1953. That means total assets at Dec. 31, 1952 are understated by that amount, proprietorship is understated by a like amount and of course the derived effect is an understatement of profit for the same period by $100. As to profit determination in 1953, since total assets are understated by $100 at the beginning of the period, proprietorship must also be understated by the same amount and since by my assumption profits for 1953 are derived from changes in assets and liabilities it must follow that profits for 1953 are overstated by the same $100. Before we demonstrate this technique algebraically let us assume that the books are still open at December 31, 1953 and the accountant discovers that not only was prepaid property tax omitted at December 31, 1952 in the amount of $100 but in addition prepaid property tax in the amount of $50 was omitted at December 31, 1953. We show the effect of this additional error by observing that total assets at December 31, 1953 are understated by $50 and proprietorship is therefore understated by $50. When the two errors are combined the net effect on 1953 profits is an overstatement of $50. The instructor can demonstrate these conclusions to the student by using the equations which we have assumed as follows:

[1] For the benefit of the "entity" student the ideas expressed above can be brought in as assumptions or omitted and the equation discussed as an algebraic formulation.

	Assets	minus	Liabilities	equals	Proprietorship
Effect of 100 Errors:					
On profit for 1952—					
Correction	+$ 100				+$ 100
Dec. 31, 1952	80,000		$25,000		55,000
Dec. 31, 1951	60,000		20,000		40,000
Changes (Profit)	$ 20,000		$ 5,000		$15,000
Correction	+ 100				+ 100
Adjusted changes (Profit)	$ 20,100		$ 5,000		$15,100
On profit for 1953—					
Dec. 31, 1953	$120,000		$45,000		$75,000
Correction	+ 100				+ 100
Dec. 31, 1952	80,000		25,000		55,000
Changes (Profit)	$ 40,000		$20,000		$20,000
Correction	− 100				− 100
Adjusted changes (Profit)	$ 39,900		$20,000		$19,900
Effect of Combined Errors:					
On profit for 1953—					
Correction	+$ 50				+ 50
Dec. 31, 1953	120,000		$45,000		$75,000
Correction	+ 100				+ 100
Dec. 31, 1952	80,000		25,000		55,000
Changes (Profit)	$ 40,000		$20,000		$20,000
Correction:					
1952 error	− 100				− 100
1953 error	+ 50				+ 50
Adjusted changes (Profit)	$ 39,950		$20,000		$19,950

The above example demonstrated a "self-correcting" error, i.e., a cash flow is presumed (in this case) in the next period which will automatically adjust the error, insofar as the profit for the two periods taken as one are concerned. But the objective of the accounting process is periodic (single accounting period) profit determination; hence the effect of any error must be determined in the light of that objective. The issue of clean surplus versus the current operating concept of income is not important in this connection because the degree of materiality of the error must first be calculated in order to make the proper decision as to the manner of its correction.

Errors that are cumulative in their incidence can also be handled by means of the same device demonstrated above. Errors of this type may be illustrated by (1) under or over statement of depreciation and (2) the allowance for bad debts for one or more years.

It is not the intent of this demonstration to have the student go through this elaborate analysis in the correction of any one or a group of errors. Its pedagogical advantage lies in teaching the student the uses to which the equation can be put in the determination of the substantive effect of errors on periodic profit. Once the student understands the relationships involved, the more conventional tabular presentations, such as those found in Finney and Miller, in Moonitz and Staehling, and in other texts can be used.[2]

[2] Finney, H. A. and Miller, Herbert E., *Principles of Accounting, Intermediate*, 4th edition, Prentice-Hall, Inc., 1951, Chapt. 5. Moonitz, Maurice and Staehling, Charles, *Accounting, An Analysis of Its Problems*, Foundation Press, Brooklyn, 1952, pp. 252–8.

N.A.C.A. Forums Provide Practical Assistance in Teaching Cost Accounting at the University of Alabama

Robert H. Van Voorhis
University of Alabama

Many accounting teachers recognize the value of bringing to their students words "from the horse's mouth" as it were, by inviting practitioners to talk to their classes. The values (and limitations) of this technique are well known. The discussion panel, with two or more practitioners answering questions raised by the audience or by panel members, brings in a wider variety of experience and a means of presentation which has certain advantages over the appearance of the individual outside speaker. But it is often more difficult for the teacher to arrange a panel discussion or, if arranged, to have it develop along the desired lines.

At the University of Alabama we have been fortunate in the past several years in having forums of expert cost accountants conduct discussions of cost accounting problems and techniques two or three times each semester for our students. The University is located in Tuscaloosa, about fifty miles from Birmingham, which is the home of one of the best N.A.C.A. chapters in the country, as evidenced by their consistent standing at or near the top in their national Stevenson Trophy competition each year. Close contacts are maintained between our teaching staff and the leaders of the Birmingham N.A.C.A. Chapter. These leaders have consistently interested themselves in the University and its students, and have given generously of their time and talents in carrying on the program described below.

As part of its national program of service to its members, the National Association of Cost Accountants develops each year a comprehensive outline for six discussion forums to be conducted in each of its local chapters. The Birmingham Chapter regularly conducts this series of forums for its members, whose interest is evidenced by their good attendance and active participation in the discussions. In recent years, four or more of these discussion forums have been repeated at the University of Alabama.

To help in coordinating the program, two or more of our accounting faculty "scout" the original forum discussion in Birmingham, making notes of the topics covered and questions asked. The latter are raised again at the student performance if, as sometimes happens, the students themselves are reticent in asking questions. In past years, the four to six panel members have come to Tuscaloosa the night following their Birmingham appearance. They meet for dinner at the University Club with several faculty members and discuss their original program, with the idea of adjusting it where necessary to the student level, and thus making it more effective.

The University audience is composed primarily of our students in cost accounting classes, of which we have five: two three-hour undergraduate courses, one two- and one three-hour graduate course, and a service course for engineers. Members of these different classes are naturally at varying stages in their cost accounting education, which affects the benefits they derive from the forums. There has been strong student interest at all levels, and little urging is needed to obtain good attendance. But there is a marked difference in the number and type of questions asked by the student audience; usually fewer and more theoretical questions than are asked by the practitioners. To stimulate student discussion, panel members ask each other

questions, or our faculty bring forward those raised by the members in Birmingham, in order to bring out particular points.

This interchange of comment between students and practitioners, and particularly the opportunity which it affords students to "check up on" their teachers and textbooks by asking the men in the field how they actually do it, has proved most stimulating to our teaching (and our student's learning) of cost accounting. (Quite incidentally, it provides both students and prospective employers with a chance to see each other in action, although this has not been a primary purpose of the program.)

In an effort to make student participation even more effective, we are presently experimenting with having the forum appear on the campus a week following its Birmingham presentation, rather than the night after. Our teachers use this interval to prepare and mimeograph introductory material which is distributed to and discussed with the students in class, in order to prepare them better for the specific topics to be covered in the discussion for forum. We think this will increase materially the benefit derived by our students, especially those in the beginning classes, who formerly have been somewhat lost in their first forum or two.

In addition to its own benefits, the forum program complements our plant visitation program, and students get more from each as a result of the other. Two or three plants may be visited by our cost students each term. Officials from these same plants frequently appear on the discussion forums. This affords opportunity for the student to ask questions about what he has seen, or if the visit follows the forum, to see what he has heard described by the speaker. Together, this leaves him with a clearer and more lasting impression than either visit or forum would have alone.

The University pays the expense of the faculty members who attend the Birmingham forum discussions and provides the dinner preceding the Tuscaloosa meeting; the N.A.C.A. members donate their time and pay their own travel expenses. In appreciation, their names are listed in the annual catalog of the University, which records visiting speakers to college classes and plants visited by class groups. Although it would seem somewhat of a chore for the N.A.C.A. members, many of them appear to enjoy it and return to help us again and again.

Similar discussion forums are held for their members by most of the 116 N.A.C.A. chapters throughout the country. Some may invite students to attend their regular forum meetings, while others may repeat their forums for the benefit of college students, as the Birmingham Chapter does. It might at first seem more desirable to have students attend and participate in the regular discussion forums put on for the N.A.C.A. members. In this way the students would obtain the benefit of discussion by a wider cross-section of cost accountants of their practical problems. But on the other hand, such discussions often get beyond the knowledge of the student. The students would also probably feel reluctant to inject their questions, and hence might feel rather left out. On balance, it seems that a repeat performance, coordinated to the maximum possible extent with the student level of understanding and experience, would generally be more beneficial. In addition to being couched more on the student level, the repeat forum has the advantage of using the best questions raised during its first meeting, plus the after thoughts of the panel in answering them.

Our experience suggests a willingness on the part of local N.A.C.A. chapters to cooperate with college teachers in bringing their practical experience in cost account-

ing to the students. First contact might be made by the teacher with the local chapter President or Director of Education. Of course these contacts work both ways—the more interest teachers show in the N.A.C.A. chapter activities, through membership, participation in programs, contributing notes and articles through the chapter to the *N.A.C.A. Bulletin*, suggesting students and alumni as possible em ployees, and in other ways, the more interest the N.A.C.A. members are likely to show in the teacher and his problems—and the more practical assistance they may be willing to give through putting on discussion forums such as those which have proved so worthwhile at the University of Alabama.

An Attempt to Formulate Elementary Classwork Problems in Social Accounting

J. E. Smyth
Queen's University, Kingston, Ontario

THE PURPOSE OF PROBLEMS IN SOCIAL ACCOUNTING

The disciplines of Accounting and Economics converge in Social Accounting. If the teacher can formulate problems in this field he has at once a means of explaining the relationship between the two disciplines and indeed of fitting the accounts of individual concerns into the pattern of society. Whole new areas of class discussion open up. Discussions along these lines have often been abortive because they have been kept on an abstract level. A specific problem, on the other hand, provides a concrete basis for understanding the concepts of social accounting (national capital and national income) and broaches the subject on terms the Accounting student can understand.

The problems need not be difficult. They may be introduced at any time after the student has mastered simple consolidations in his regular Accounting work. The problems will necessarily involve a number of important assumptions, especially if they are to be kept simple, but the assumptions can be turned to good advantage. A useful class discussion can be built up around recognizing assumptions and speculating upon the effect which their removal would have on the solution to the problem. The problems illustrated in this article are reduced to the simplest terms their author could conceive of. They can easily be made more elaborate. For example, some specific suggestions are made at the end of this article for removing some of the assumptions of Problem II after the basic problem itself is mastered.

The writer was stimulated to prepare the problems appearing below after reading *The Social Framework*[1] by J. R. Hicks (Oxford University Press, 1942) and *National Income and Income Analysis* by Richard Ruggles (McGraw-Hill, New York, 1949). The various articles on the subject of social accounting which appeared in the April 1953 issue of the Accounting Review provided an additional incentive.

Problem I below is intended to introduce the idea of "National capital" or "national wealth." (Actually economists seem not to have reached complete agreement on all the details of the definition of national capital, but the concept is an interesting one, and our problem is a simple one.) The calculation of national capital emerges as an extension of the accounting consolidation technique.

[1] The American edition is *The Social Framework of the American Economy* by J. R. Hicks and A. G. Hart (Oxford University Press, New York, 1945).

It is of particular interest to see how items which represent assets from the point of view of the individual concern disappear in the process of computing national capital. Even money (currency and bank balances), so much an asset from the viewpoint of the individual citizen and individual business, fails to emerge as any part of national wealth. The problem may therefore help the student to understand the function of money in society and in general to learn to distinguish the "real" assets of a community.

Problem II introduces a new method of analysing the operating statements of a business—from the point of view of measuring the contribution of a business, as a working unit, to the community as a whole. The student will want to know why "net output" equals "factor cost" for each business and he will find himself thinking about the contents of the operating statements in a way he has not thought about them before.

Problem II also serves to define "net output" (or "value added"), "factor input," "national income," and "gross national product" through the preparation of statements in which the dollar amounts of these concepts are calculated for a given year.

The writer realizes that his development of problems in the field of Social Accounting is incomplete, but he hopes that the problems and solutions presented in this article may stimulate comments and criticisms which will lead to their improvements.

PROBLEM I—THE MEASUREMENT OF NATIONAL CAPITAL

Assume a community, "A," in which there are only two companies, X Co. Ltd. and Y Co. Ltd., and one bank, The Z Bank. All the shares in Y Co. Ltd, were purchased by X Co. Ltd. December 31, 1952. All the shares in X Co. Ltd. are held by individual citizens of "A." The Z Bank, as the only bank in the community, is responsible for the issue of paper money (which takes the form of its own bank notes) and coins.

X Co. Ltd.
Balance Sheet at December 31, 1952

Assets		*Liabilities and Capital*	
Cash on hand	$ 500	Accounts payable (Y Co. Ltd.)	$ 5,000
Cash in bank	3,500	Share capital	50,000
Accounts receivable (citizens of "A")	14,000	Earned surplus	15,000
Merchandise inventory	2,000		
Shares in Y. Co. Ltd. (cost, Dec. 1952)	40,000		
Fixed assets (cost less depreciation)	10,000		
	$ 70,000		$ 70,000

Y Co. Ltd.
Balance Sheet at December 31, 1952

Assets		*Liabilities and Capital*	
Cash on hand	500	Bank overdraft	$ 6,000
Accounts receivable (X Co. Ltd.)	5,000	Share capital	25,000
Merchandise inventory	26,500	Earned surplus	9,000
Fixed assets (cost less depreciation)	8,000		
	$ 40,000		$ 40,000

THE Z BANK

Balance Sheet at December 31, 1952

Assets		*Liabilities and Capital*	
Cash on hand	$ 2,000	Deposit liabilities	$ 30,000
Government of "A" bonds	25,000	Bank notes (and coins) payable	12,000
Loans receivable	29,000	Share capital	20,000
Fixed assets (cost less depreciation)	14,000	Surplus and reserves	8,000
	$ 70,000		$ 70,000

GOVERNMENT OF "A"

Balance Sheet at December 31, 1952

Assets and Deficit		*Liabilities*	
Land and buildings (post offices, government offices etc.)	$ 30,000	National debt (bonds payable)	$ 75,000
Excess of national debt over government property	45,000		
	$ 75,000		$ 75,000

INDIVIDUAL CITIZENS OF "A"

Combined Balance Sheet at December 31, 1952

Personal Property		*Debts*	
Cash on hand (bank notes and coins)	$ 9,000	Owing to Z Bank	$ 23,000
Money in bank	26,500	Owing to X Co. Ltd. re purchases on credit	14,000
Shares in X Co. Ltd. (book value)	65,000	Net assets	218,000
Shares in Z Bank (book value)	28,000		
Government of "A" bonds (par value)	40,000		
Foreign investments (cost)	11,500		
Automobiles	25,000		
Furniture	20,000		
Houses	30,000		
	$255,000		$255,000

REQUIRED: Prepare a Statement of National Capital for "A" as of December 31, 1952.

SOLUTION TO PROBLEM ON THE MEASUREMENT OF NATIONAL CAPITAL

Step I—Consolidate X Co. Ltd. and Y Co. Ltd.

	X Co. Ltd.	*Y Co. Ltd.*	*Eliminations* *Dr.*	*Eliminations* *Cr.*	*Consol. Balance Sheet*
Assets					
Cash on hand	$ 500	$ 500			$ 1,000
Cash in bank	3,500				3,500
Accounts receivable					
citizens of "A"	14,000				14,000
X Co. Ltd.		5,000		(a) $ 5,000	
Merchandise inventory	2,000	26,500			28,500
Shares in Y Co. Ltd.	40,000			(b) 40,000	
Fixed assets (cost less depreciation)	10,000	8,000			18,000
Purchase discrepancy			(b) 6,000		6,000
	$70,000	$40,000			$71,000
Equities					
Current liabilities					
Y Co. Ltd.	$ 5,000		(a) $ 5,000		
Z Bank		$ 6,000			$ 6,000
Share capital					
X Co. Ltd.	50,000				50,000
Y Co. Ltd.		25,000	(b) 25,000		—
Earned surplus					
X Co. Ltd.	15,000				15,000
Y Co. Ltd.		9,000	(b) 9,000		—
	$70,000	$40,000	$45,000	$45,000	$71,000

Step II—Consolidate X Co. Ltd (consol.), Z Bank, Government of "A" and Individual Citizens of "A"

	X Co. Ltd. (consol.)	*Z Bank*	*Government of "A"*	*Individual citizens of A*	*Total*	*Eliminations* *Dr.*	*Eliminations* *Cr.*	*Statement of National Capital*
Assets								
Cash on hand	$ 1,000	$ 2,000		$ 9,000	$ 12,000		(a) $ 12,000	—
Cash in bank	3,500	—		26,500	30,000		(b) 30,000	—
Accounts receivable (citizens of "A")	14,000				14,000		(c) 14,000	—
Merchandise inventory	28,500				28,500			$ 28,500
Fixed (capital) assets	18,000	14,000	30,000	75,000	137,000	(d) 6,000		143,000
Purchase discrepancy	6,000				6,000		(d) 6,000	—
Government bonds	—	25,000	—	40,000	65,000		(e) 65,000	—
Loans receivable	—	29,000	—		29,000		(f) 29,000	—
National deficit			45,000		45,000		(g) 45,000	—
Shares in X Co. Ltd.				65,000	65,000		(h) 65,000	—
Shares in Z Bank				28,000	28,000		(i) 28,000	—
Foreign investments				11,500	11,500			11,500
	$71,000	$70,000	$75,000	$255,000	$471,000			$183,000
Equities								
Bank overdraft	$ 6,000			$ 23,000	$ 29,000	(f) $ 29,000		—
National debt			$75,000		75,000	(e) 65,000		$ 10,000
Deposit liabilities		$30,000			30,000	(b) 30,000		—
Bank notes and coins (payable)		12,000			12,000	(a) 12,000		—
X Co. Ltd.—Share capital	50,000				50,000	(h) 65,000		—
Earned surplus	15,000				15,000			—
Z Bank—Share capital		20,000			20,000	(i) 28,000		—
Surplus		8,000			8,000			
Owing to X Co. Ltd.				14,000	14,000	(c) 14,000		—
Net assets				218,000	218,000	(g) 45,000		173,000
	$71,000	$70,000	$75,000	$255,000	$471,000	$294,000	$294,000	$183,000

COMMUNITY OF "A"
Statement of National Capital
As at 31 Dec. 1952

Assets		*Equities*	
Merchandise inventories	$ 28,500	National debt owed to persons outside the community of "A"	$ 10,000
Fixed assets	143,000	Net assets	173,000
Foreign investments	11,500		
	$183,000		$183,000

PROBLEM II.—THE MEASUREMENT OF NATIONAL INCOME

Assume a community, "A," with two companies, X Ltd. and Y Ltd., one bank, The Z Bank, and a farmers' cooperative which markets all farm produce. Assume further that there are no transactions between members of the economic unit "A" and foreigners or outside institutions.

X Ltd. owns 25% of the capital stock of Y Ltd. and the balance is held by individual citizens of "A." All the shares and bonds of X Ltd. are held by individual citizens of "A." X Ltd. buys all its materials from Y Ltd. (the entire output of Y Ltd.) Y Ltd buys all its raw materials from The Farmers' Cooperative. All sales of X Ltd., Y Ltd., and The Farmers' Cooperative are cash sales.

The following are the operating statements for X Ltd. and Y Ltd. for the year ended December 31, 1953 (assuming no opening and closing inventories of work-in-process):

X Ltd. and Y Ltd.
Manufacturing Statement
For the Year Ended December 31, 1953

	X Ltd.		*Y Ltd.*	
Cost of materials used:				
Materials inventory Jan. 1-53	$ 2,000		$1,500	
Purchases	15,000		7,500	
	17,000		9,000	
Materials inventory Dec. 31-53	3,000		2,000	
		$14,000		$ 7,000
Direct labour		8,000		5,000
Factory service:				
Depreciation of plant and machinery	2,500		1,200	
Indirect labour	1,500		800	
		4,000		2,000
Cost of goods manufactured		$26,000		$14,400

X Ltd. and Y Ltd.
Income Statement
For the Year Ended December 31, 1953

	X Ltd.		*Y Ltd.*	
Sales revenue		$40,000		$18,000
Deduct cost of goods sold				
Finished goods inventory, January 1, 1953	$ 4,000		$ 3,000	
Cost of goods manufactured	26,000		14,000	
	$30,000		$17,000	
Finished goods inventory, December 31, 1953	6,000		7,000	
		24,000		10,000
Gross trading margin		$16,000		$ 8,000
Deduct selling, administrative and financial expenses				
Rent, office building	$ 900		$ 600	
Office salaries	4,600		3,400	
Bond interest	500		—	
		6,000		4,000
		$10,000		$ 4,000
Add subsidiary revenue				
Dividends received from Y Ltd		500		—
Profit before taxes		$10,500		$ 4,000
Deduct income taxes		3,500		2,000
Profit for the year		$ 7,000		$ 2,000

X Ltd. and Y Ltd.
Surplus Statement
For the Year Ended December 31, 1953

	X Ltd.	*Y Ltd.*
Balance, January 1, 1953	$14,000	$7,000
Add profit for the year	7,000	2,000
	$21,000	$9,000
Deduct dividends	5,000	2,000
Balance, December 31, 1953	$16,000	$7,000

During the year ended December 31, 1953 X Ltd. manufactured for its own use fixed assets at a cost of $5,000, consisting of $3,000 of materials purchased from Y Ltd. and $2,000 labour by employees of X Ltd. This expansion was financed by the issue, to individual citizens of "A" of additional shares of X Ltd. in the amount of $5,000.

In addition to the raw materials sold to Y Ltd. the farmers of "A" sold, through their cooperative, produce worth $8,700 to other citizens of "A" during the year.

In addition to income derived from the two companies and the cooperative, the individual citizens of "A" rendered services to one another (medical, legal, accounting, educational, electrical, plumbing, etc.—worth $10,000 during the year; and the corporation and personal income taxes collected by the government of "A" were used entirely to pay the salaries of civil servants. Personal income taxes paid by citizens of "A" were $9,000.

The change in the financial position of the Z Bank over the year ended December 31, 1953 may be summarized as follows:

Increase in assets	
Loans receivable—Y Ltd.	$3,300
Increase in deposit liabilities	
X Ltd.—current account	$1,500
Citizens of "A"—savings accounts	1,800
	$3,300

REQUIRED:

(a) A statement of source and application of funds for X Ltd. and Y Ltd. for the year ended December 31, 1953.
(b) A statement of changes in working capital for X Ltd. and Y Ltd. for the year ended December 31, 1953 (in terms of increases and decreases in individual items of working capital).
(c) A statement of net output for X Ltd., Y Ltd., and The Farmers' Cooperative for the year ended December 31, 1953.
(d) A statement of factor input for X Ltd., Y Ltd., and The Farmers' Cooperative for the year ended December 31, 1953.
(e) A statement of income and expenditures for the individual ctizens of "A" for the year ended December 31, 1953.
(f) A statement of increase in national capital of "A" for the year ended December 31, 1953.
(g) A statement of national income for "A" (on the production side) for the year ended December 31, 1953.
(h) A statement of national income for "A" (on the expenditure side) for the year ended December 31, 1953.
(i) A statement of national income for "A" (on the income side) for the year ended December 31, 1953.
(j) A statement of gross national product for "A" for the year ended December 31, 1953.

SOLUTION TO PROBLEM ON MEASUREMENT OF NATIONAL INCOME

(a)

X LTD. AND Y LTD.
Statement of Source and Application of Funds
For the Year Ended 31 Dec. 1953

	X Ltd.		Y Ltd.	
Sources of working capital				
Sales revenue	$40,000		$18,000	
Dividends received	500			
Issue of additional shares	5,000			
		$45,500		$18,000
Applications of working capital				
Cost of goods sold*	$21,500		$ 8,800	
Selling, administrative, and financial expenses	6,000		4,000	
Income taxes	3,500		2,000	
Dividends paid	5,000		2,000	
Fixed assets acquired	5,000			
		41,000		16,800
Increase in working capital		$ 4,500		$ 1,200

* Excluding depreciation on plant and equipment.

(b)

X LTD. AND Y LTD.
Statement of Changes in Working Capital
For the Year Ended 31 Dec. 1953

	X Ltd.		Y Ltd.	
Increase in working capital				
Bank balance (Z Bank)	$ 1,500			
Inventories—finished goods	2,000		$ 4,000	
raw materials	1,000		500	
		$ 4,500		$ 4,500
Decreases in working capital				
Bank loan (Z Bank)				3,300
Net increase		$ 4,500		$ 1,200

(c)

X LTD., Y LTD., AND THE FARMERS' COOPERATIVE
Statement of Net Output
For the Year Ended 31 Dec. 1953

	X Ltd.	Y Ltd.	The Farmers' Cooperative
Value of output (gross)			
Sales—to citizens of "A"	$40,000	—	$ 8,700
to other businesses	—	$18,000	7,500
Increase in inventories—raw materials	1,000	500	—
finished goods	2,000	4,000	—
Increase in fixed assets	5,000	—	—
	$48,000	$22,500	$16,200
Deduct contributions to value of output by other businesses			
Purchases of materials for regular production	$15,000	7,500	—
Purchase of materials for manufacture of fixed assets	3,000	—	—
	$18,000	$ 7,500	—
Gross value added	$30,000	$15,000	$16,200
Deduct depreciation of plant and equipment	2,500	1,200	—
Net value added (net output)	$27,500	$13,800	$16,200

(d)

X LTD., Y LTD., AND THE FARMERS' COOPERATIVE
Statement of Factor Input
For the Year Ended 31 Dec. 1953

	X Ltd.	*Y Ltd.*	*The Farmers' Cooperative*
Employees			
Direct labour	$ 8,000	$ 5,000	
Indirect labour	1,500	800	
Office salaries	4,600	3,400	
Production of fixed assets	2,000		
	$16,100	$ 9,200	
Farmers—direct labour			$16,200
Landlords—rent of office buildings	$ 900	$ 600	
Bondholders—interest on bonds	$ 500	$ —	
Shareholders			
Dividends	$ 5,000	$ 2,000	
Increase in undistributed profit	2,000	—	
	$ 7,000	$ 2,000	
Less dividends received from other companies	500	—	
	$ 6,500	$ 2,000	
Civil servants (corporation income tax)	$ 3,500	$ 2,000	
Total factor input	$27,500	$13,800	$16,200

(e)

INDIVIDUAL CITIZENS OF "A"
Statement of Income and Expenditures
For the Year Ended 31 Dec. 1953

Income received			
Salaries and wages paid by			
X Ltd.	$16,100		
Y Ltd.	9,200		
Government of "A"*	14,500		
		$39,800	
Rent		1,500	
Interest and dividends			
X Ltd.—bond interest	$ 500		
X Ltd.—dividends	5,000		
Y Ltd.—dividends	1,500		
		7,000	
Farm produce bought by			
Y Ltd.	$ 7,500		
Individual consumers	8,700		
		16,200	
Fees received for medical, dental, legal services, etc.		10,000	
			$74,500
Expenditures			
Merchandise purchased from X Ltd.		$40,000	
Services purchased from doctors, dentists, lawyers, etc.		10,000	
Produce purchased from farmers		8,700	
Personal income taxes		9,000	
Purchased of shares in X Ltd.		5,000	
			72,700
Excess of income over expenditures (increase in savings account balances)			$ 1,800

* Salaries paid by Government of "A" consist of $5,500 income tax paid by corporation and $9,000 income tax paid by individual citizens.

(f)

"A"

Statement of Increase in National Capital

For the Year Ended 31 Dec. 1953

Increase in company inventories		
X Ltd.—raw materials	$1,000	
finished goods	2,000	
Y Ltd.—raw materials	500	
finished goods	4,000	
		$7,500
Increase in fixed assets (net)		
Fixed assets manufactured for use	$5,000	
Less depreciation of fixed assets, all companies	3,700	
		1,300
*Increase in national capital**		$8,800

* Since there were no transactions with foreigners during the year, the increase in national capital is equal to "net home investment."

(g)

"A"

Statement of National Income

For the Year Ended 31 Dec. 1953

(On the Production Side)

Net output of business		
X Ltd.	$27,500	
Y Ltd.	13,800	
The Farmers' Cooperative	16,200	
		$57,500
Services rendered but not included in net output above		
Earnings of doctors, dentists, lawyers, etc.	$10,000	
Portion of earnings of civil servants represented by personal income taxes	9,000	
		19,000
National income for the year		$76,500

(h)

"A"

Statement of National Income

For the Year Ended 31 Dec. 1953

(On the Expenditure Side)

Consumption by individual citizens of "A"		
Goods produced by business (X Ltd.)	$40,000	
Professional services, etc.	10,000	
Farm produce	8,700	
Government services (provided by personal income taxes)	9,000	
		$67,700
*Savings by individual citizens of "A"**		
Increase in bank balances of net	$ 1,800	
Increase in undistributed profits of X Ltd.	2,000	
Purchase of capital stock in X Ltd.	5,000	
		8,800
National income for the year		$76,500

* A reference to the Statement of Change in National Capital will show that savings = investment ($8,800).

(i)

"A"

Statement of National Income

For the Year Ended 31 Dec. 1953

(On the Income Side)

Income received by individual citizens of "A"		
Salaries and wages	$39,800	
Rent	1,500	
Interest and dividends	7,000	
Sale of farm produce	16,200	
Fees received for medical, dental, legal services, etc.	10,000	
		$74,500
Income earned, but not received		
Undistributed profit of X Ltd.		2,000
National income for the year		$76,500

(j)

"A"

Gross National Product

For the Year Ended 31 Dec. 1953

National income for the year		$76,500
Add Depreciation of fixed assets	$ 3,700	
Indirect taxes	—	
		3,700
Gross national product at market prices		$80,200

SUGGESTED SUPPLEMENTS TO PROBLEM II

Supplement 1

Using the data of Problem II assume futher that during the year ended 31 Dec. 1953,

(i) the citizens of "A" consumed imported goods worth	$5,000
(ii) fixed assets were imported for use by X Ltd. (the purchase being financed by the issue of capital stock to citizens of "A")	2,000
(iii) the citizens of "A" invest in foreign stocks and bonds in the amount of	3,000
(iv) citizens of "A" receive income from foreign investments in the amount of	4,000
(v) the $40,000 sales revenue of X Ltd. includes sales to foreigners of	6,000

Required:

(a) A statement of income and expenditures for the individual citizens of "A" for the year ended 31 Dec. 1953
(b) A statement of national income for the year ended 31 Dec. 1953 on the production side (goods produced and services rendered)
(c) A statement of national income for the year ended 31 Dec. 1953 on the expenditure side (goods and services consumed+savings)
(d) A statement of national income for the year ended 31 Dec. 1953 on the income side (income received+income earned but not distributed)
(e) A balance of payments statement for "A" for the year ended 31 Dec. 1953.

Supplement 2

Using the data of Problem II assume further that of the corporation and personal income taxes paid during the year, $3,500 was required to pay interest on the national debt, $1,000 to pay old age pensions, and the balance ($10,000) to pay the salaries of civil servants.

Required:

Statements of national income for the year ended 31 Dec. 1953 on the production side, the expenditure side, and the income side.

Supplement 3

Change the income and surplus statements of X Ltd. and Y Ltd. to show Y Ltd. incurring, in addition to its other expenses, interest on its bank loan in the amount of $700; and to show X Ltd. earning, in addition to its other revenue, interest on its bank deposit in the amount of $100.

The change in the financial position of the Z Bank over the year ended 31 Dec. 1953 may then be summarized as follows:

Increase in assets		
Cash on hand	$ 600	
Loans receivable—Y Ltd.	3,300	
		$3,900
Increase in deposit liabilities		
X Ltd.—current account	$1,500	
Citizens of "A"—savings accounts	2,150	
		$3,650
Increase in surplus		250
		$3,900

The increase in the surplus of the Z Bank is explained as follows:

Interest revenue		
Loan to Y Ltd.		$700
Interest expense		
Deposit of X Ltd.	$100	
Deposits of citizens of "A"	200	
	$300	
Salary expense	150	
		450
Increase in surplus		$250

Required:

Statements (a) to (j) as required by Problem II.

PROFESSIONAL EXAMINATIONS

A Department for Students of Accounting

HENRY T. CHAMBERLAIN

THE FOLLOWING problems were prepared by the Board of Examiners of the American Institute of Accountants and were presented as the second half of the C.P.A. examination in accounting practice on November 5, 1953. The candidates were required to solve all problems in four and a half hours. The weights assigned were: problem 1, 12 points; problem 2, 8 points; problem 3, 30 points.

A suggested time schedule is given below:

Problem 1	60 minutes
Problem 2	45 minutes
Problem 3	150 minutes

No. 1

The following relate to federal income taxes. Parts (a) and (b), dealing with items of gross income and deductions, respectively, should be answered true or false. However, in not more than one sentence, you *may* give the reason for your conclusion where an explanation seems appropriate. The merit of the explanation will be considered if one is given.

a. Answer "true" or "false" and give explanation if you wish to do so. Assume that all of the income in question relates to 1952 only:

1. Mr. Grey is the sole beneficiary of a trust whose entire corpus consists of municipal bonds. The trust was created under the will of Grey's father which stated that the income therefrom is distributable currently. The income is taxable to Mr. Grey when received.
2. Mr. Roe is an amateur novelist. He submitted one of his works to a contest and was awarded first prize, consisting of $5,000 in cash. The proceeds are tax-free.
3. In 1950, Mr. Brown was injured in an automobile accident and commenced a negligence action against the owner of the other vehicle. No medical deduction was claimed for expenses incurred in this connection. In 1952, Mr. Brown received $50,000 in damages pursuant to a judgment rendered in his favor. The full amount is taxable.
4. Mr. Doe is the sole stockholder of the X Corporation. The corporation was formed in 1947 and the basis for Doe's stock is $250,000. The corporation's tax returns filed for its first five years (all of which were accepted as filed by the Treasury) showed net operating losses of $20,000 for each year. This was properly shown on the balance-sheet at December 31, 1951 as a deficit of $100,000. For 1952 taxable income of $50,000 will be reported, but no tax will be payable, due to the net operating loss deduction. In December 1952 a dividend of $50,000 was paid to Mr. Doe after having obtained an opinion from counsel that state law was not violated thereby. The full amount of this distribution is a return of capital and therefore tax-free.
5. Mr. White's mother made a gift to him on his birthday (June 15, 1952) consisting of 100 shares of General Motors stock, at which time the quoted market price was $60 per share. Mr. White should report $6,000 as taxable income in his 1952 return.
6. Mr. Smith owns a ranch for which he purchased ten head of cattle on October 1, 1951 at a cost of $500, to be used for breeding purposes. On July 1, 1952 all of these cattle were sold for $1,400. Depreciation from date of acquisition to July 1, 1952 was $100. The profit of $1,000 is ordinary income.
7. Mr. Smith acquired his ranch in 1940 by paying $50,000 in cash and obtained a mortgage loan of $100,000. From date of acquisition to 1952 the mortgage has been reduced by amortization payments of $28,000, leaving a balance of $72,000. During 1952, Smith repurchased his mortgage note (which was in negotiable form) for $50,000. Smith realized no taxable income on this transaction.
8. The X Corporation, as described in question a. (4) above, has had no taxable income during the period from 1947 (inception) to 1951. In its first year it paid and deducted a certain franchise tax amounting to $2,000. During 1952, after several administrative hearings, a refund was obtained. The full $2,000 is tax-free in 1952.
9. The A Corporation owns a parcel of vacant land which was occupied by a tenant in 1952. The lease agreement provided that in lieu of rent, the tenant shall erect a certain structure on the land, which would revert to the A Corporation upon expiration of the term of the lease (one year). The tenant fulfilled its part of the

agreement and vacated on December 31, 1952 leaving a small building having a fair market value of $2,500. This amount should be reported as rent income in the A Corporation's 1952 return.

10. The A Corporation also owns some timber land. By making a proper election it may report on its return long-term capital gains by cutting timber which need not be sold before the end of 1952.
11. During 1952, B Corporation traded in a tractor having an adjusted basis of $2,000, paid cash of $2,000 and received a new tractor in exchange, having a fair market value of $5,000. The $1,000 profit on the exchange should be reported as a capital gain.
12. Mr. Brown owned in the State of Florida an orange grove which he operated profitably for several years and sold during 1952. That portion of the profit which he realized from the sale relating to the unharvested fruit is ordinary income.

b. Answer "true" or "false" and give explanation if you wish to do so. Assume that the following deductions relate to 1952 only:

1. The ABC Corporation has an inventory of widgets which always has been priced at LIFO. At December 31, 1952, the LIFO inventory is $125,000, but market is $100,000. The LIFO inventory may be written down to market for federal tax purposes and the $25,000 difference may be charged to cost of sales.
2. The C Corporation had accounts receivable at December 31, 1952 aggregating $200,000, in respect of which a cash discount of 2% is allowed, if paid not later than January 10, 1953. A reserve for discount of $4,000 was recorded in the accounts. The offsetting charge to income is deductible.
3. The D Coporation sold a plant building for $50,000 which was acquired in 1940. The adjusted basis of D Corporation for such building was $100,000. The $50,000 loss is a capital loss. (Assume that there were no other gains or losses on sale of depreciable property or land used in trade or business.)
4. The E Corporation acquired a certain machine on January 2, 1952 which cost $50,000 and is used in connection with certain government contracts. An application for a certificate of necessity was filed and certification was received during the year in respect of 65% of the emergency facility. If a proper election is made, amortization of $6,500 may be claimed on the 1952 return.
5. The F Corporation adopted a trusteed pension plan in 1952 which covered 80% of all personnel. Proper approval was obtained from the Treasury. The actuaries informed the company that a payment of $50,000 to the trustee was necessary to fund the cost under the plan based upon past service, in addition to current service cost of $4,000. The company paid $5,000 on December 31, 1952 and $49,000 on March 5, 1953. The full amount of $54,000 is deductible in 1952.
6. Mr. Green resides in a suburb of Chicago and has recently been appointed chief counsel to a government agency in Washington, D. C. Mr. Green's duties as chief counsel require his presence in Washington during ten months of 1952. He can deduct the rent paid for his Washington apartment, plus other living expenses, inasmuch as Illinois is his premanent residence.
7. Mr. Jones paid a fee of $1,000 in 1952 to an estate planning expert for drawing a will and advising him with respect to federal estate taxes. This may be deducted on his 1952 return.
8. Mr. White borrowed $100,000 from a bank to purchase municipal bonds, having a redemption value of $90,000, which were then pledged as security for the loan. The interest paid on the loan for 1952 may be deducted.
9. Mr. Big is the owner of a certain oil lease. The gross income for 1952 from the lease was $100,000 and expenses other than depletion aggregated $70,000. Percentage depletion of $27,500 is allowable since it is greater than cost depletion of $20,000.
10. Mr. Blue received dividends from certain Canadian stocks upon which 15% Canadian income tax was withheld at source inasmuch as Blue is an American citizen. The Canadian income tax, like federal income tax, is not deductible.
11. Mr. Smart paid traffic violation fines totaling $100 in 1952. The full amount is deductible in computing net income.
12. The garage on Mr. Doe's Illinois residence was damaged in 1952 during a hailstorm. The original cost was $3,000. Its fair market value immediately prior to the storm was $5,000 and was $1,000 thereafter. A casualty loss of $4,000 may be claimed by Mr. Doe.

No. 2

Pitts-Marvel Sales Corporation sells goods and accounts for such sales on the installment basis. At the end of each year it takes up gross profit on these sales in the year(s) of collection rather than in the year of sale and considers each collection to be composed of cost and gross profit elements.

The balances of the control accounts for Installment contracts receivable at the beginning and end of 1952 were:

	January 1, 1952	*December 31, 1952*
Installment contracts receivable—1950	$ 24,020	—
—1951	344,460	67,440
—1952	—	410,090

As collections are made, the company debits Cash and credits Installment contracts receivable. During 1952, upon default in payment by customers, the company repos-

sessed merchandise having an estimated resale value of $1,700. The sales had been made in 1951 for $5,400, and $3,200 had been collected prior to default. The company recorded the default and repossession by a debit to Inventory repossessed merchandise and a credit to Installment contracts receivable—1951 for the uncollected balance.

The company's sales and cost of sales for the three years involved are summarized below:

	1950	*1951*	*1952*
Net sales	$380,000	$432,000	$602,000
Cost of sales	247,000	285,120	379,260

Required:

a. Prepare journal entries to record at December 31, 1952 the recognition of profits and any other adjustments arising from the above data. Give complete explanations in support of your entries.
b. Give one acceptable alternate method of handling the repossession and discuss the relative merits of it as compared to the method you used in (a).

No. 3

You are engaged in your second annual audit of Richardson's Chemix, Inc., as of December 31, 1952. The company manufactures a single product, Chemix.

One pound of basic raw material is required for the production of one pound of finished product. All production is completed at the close of each day. Other materials, in relatively minor quantities, are added at approximately the same rate as are direct labor and manufacturing overhead. For this reason, Miscellaneous materials used is included as part of overhead in Processing costs.

For the purpose of monthly adjustment of the books and interim statements, processing unit cost is computed monthly at a predetermined percentage of average unit cost of basic materials. At the end of the year, finished product inventory valuation is adjusted to the *average* cost of basic material issued from stores plus *actual* processing costs. Inventories are carried at cost in the statements.

In prior years the company shipped its product in non-returnable cardboard containers, but as of January 1, 1952 the management converted to new returnable metal containers which cost $6 each. These new containers average six deliveries each before being scrapped. To encourage return of the new containers, customers are billed $9 per container, credit for which amount is granted upon return in good condition. Containers remain the property of the client, and billings for them are considered to be in the nature of customers' deposits.

Control accounts are maintained for the following profit and loss items: Processing costs, Selling and distribution expense, General and administrative expense, and Other additions and deductions.

Required:

You are to prepare working papers which show in detail "Balance per books 12/31/52," "Audit Adjustments," "Profit and Loss for Year," and "Balance-Sheet 12/31/52." (Separate worksheets may be prepared for Balance-Sheet accounts and for Profit and Loss accounts). Key all audit adjustments and prepare formal journal entries which will provide a clear explanation for each of your adjustments. Also prepare schedules supporting your entries for Returnable containers, Finished product inventory and Federal income tax payable.

A summary of the ledger accounts showing the opening balance, transactions and book adjustments, and closing balance for each account follows. (There are no footing, extension, or posting errors in the following work sheets.)

Richardson's Chemix, Inc.
Work Sheet—December 31, 1952

	Per Books 12/31/51		*Transactions and Adjustments* *Per Books*		*Per Books 12/31/52*	
Account	*Debit*	*Credit*	*Debit*	*Credit*	*Debit*	*Credit*
Cash	$103,500		(5) $1,775,560 (12) 4,850	(7) $1,760,490 (11) 9,460	$ 113,960	
Accounts receivable—trade	70,000		(1) 1,711,000	(3) 96,000 (5) 1,577,800 (6) 2,400	104,800	
Estimated uncollectible accounts		$ 2,000	(6) 2,100	(10) 3,500		$ 3,400
Finished product inventory	92,000		(4) 15,100 (9) 1,071,000 (19) 900	(2) 1,027,000	152,000	
Raw material inventory	38,500		(8) 741,500	(9) 714,000	66,000	
Miscellaneous materials inventory	8,000		(18) 11,025		19,025	
Returnable containers			(4) 48,000 (8) 24,000	(2) 54,000 (17) 1,440	16,560	
Prepaid insurance	2,300		(8) 14,300	(14) 14,200	2,400	
Cash value of life insurance	3,500		(14) 400		3,900	
NAR Distributors, Inc. stock			(8) 23,000 (21) 2,000		25,000	
Land	10,000				10,000	
Building	100,000		(8) 120,000		220,000	
Accumulated depreciation—building		25,000		(15) 3,300		28,300
Machinery and equipment	65,000		(8) 12,500		77,500	
Accumulated depreciation—machinery and equipment		35,000		(15) 8,050		43,050
Vouchers payable		31,000	(7) 1,760,490	(8) 1,768,965 (20) 10,100		49,575
Withheld and accrued taxes		4,940	(8) 88,320	(8) 73,400 (16) 27,000		17,020
Federal income tax payable		23,890	(8) 23,920	(22) 48,400		48,370
Mortgage bonds payable				(5) 197,760		197,760
Capital stock (stated value $50)		50,000		(13) 25,000		75,000
Paid-in surplus		46,920				46,920
Retained earnings		274,050	(13) 25,000	(21) 2,000 (12) 100		251,150
Treasury stock			(11) 9,460	(12) 4,750	4,710	
Carried forward	$492,800	$492,800	$7,484,425	$7,429,115	$ 815,855	$ 760,545

Richardson's Chemix, Inc.
Work Sheet—December 31, 1952
(Continued)

Account	*Per Books 12/31/51* *Debit*	*Credit*	*Transactions and Adjustments Per Books* *Debit*	*Credit*	*Per Books 12/31/52* *Debit*	*Credit*
Brought forward	$492,800	$492,800	$7,484,425	$7,429,115	$ 815,855	$ 760,545
Sales			(3) 96,000	(1) 1,711,000		1,615,000
Cost of sales			(2) 1,081,000	(4) 63,100		
			(17) 1,440	(18) 11,025		
			(20) 10,100	(19) 900	1,017,515	
Processing costs applied				(9) 357,000		357,000
Processing costs			(8) 310,825			
			(14) 9,050			
			(15) 10,000		329,875	
Selling and distribution expense			(8) 302,000			
			(14) 2,975			
			(15) 550		305,525	
General and administrative expense			(6) 300			
			(8) 177,000			
			(14) 1,775			
			(15) 800			
			(16) 27,000			
			(10) 3,500		210,375	
Other additions and deductions			(8) 5,000		5,000	
Federal income tax			(22) 48,400		48,400	
	$492,800	$492,800	$9,572,140	$9,572,140	$2,732,545	$2,732,545

The following entries, as shown in the work sheet, summarize the transactions for the year:

(1) Accounts receivable—trade		$1,711,000	
Sales			$1,711,000
Sales of Chemix	$1,630,000		
Returnable containers—9,000 @ $9	81,000		
	$1,711,000		
(2) Cost of sales		1,081,000	
Finished product inventory			1,027,000
Returnable containers			54,000
To cost sales made during the year.			
(3) Sales		96,000	
Accounts receivable—trade			96,000
Sales returns: Chemix	$ 24,000		
Containers returned—8,000 @ $9	72,000		
	$ 96,000		
(4) Finished product inventory		$ 15,100	
Returnable containers		48,000	
Cost of sales			63,100
To restore returns to inventory			
(5) Cash		1,775,560	
Accounts receivable—trade			1,577,800
Mortgage bonds payable			197,760
Receipts from customers on account and the net proceeds of a 20-year, 5% bond issue, dated 7/1/52, interest payable each January 1 and July 1. Entire issue was sold on 10/1/52 at 99, plus accrued interest. Costs of issue of $2,740 were paid.			

(6)	Estimated uncollectible accounts	$ 2,100	
	General and administrative expense	300	
	Accounts receivable—trade		$ 2,400
	To write off accounts proved uncollectible: 1951 sales, $2,100; 1952 sales, $300.		
(7)	Vouchers payable	1,760,490	
	Cash		1,760,490
	To record payments of vouchers.		
(8)	Raw material inventory	741,500	
	Returnable containers	24,000	
	Prepaid insurance	14,300	
	NAR Distributors, Inc. stock (1,000 shares)	23,000	
	Processing costs (salaries and wages, miscellaneous materials, etc.)	310,825	
	Selling and distribution expense (salaries, etc.)	302,000	
	General and administrative expense (salaries, etc.)	177,000	
	Other additions and deductions (interest)	5,000	
	Withheld and accrued taxes	88,320	
	Federal income tax payable	23,920	
	Building	120,000	
	Machinery and equipment	12,500	
	Withheld and accrued taxes		73,400
	Vouchers payable		1,768,965
	Per voucher register. The vouchers charged to Building were for construction of a factory extension completed in November. Those charged to Machinery and Equipment were for machinery installed in the factory extension. The contract price for the machinery was $52,500, payable $10,000 down and the balance in 17 monthly installments of $2,500 each payable the 10th of each month.		
(9)	Finished product inventory	1,071,000	
	Raw materials inventory		714,000
	Processing costs applied		357,000
	For cost of completed production.		
(10)	General and administrative expense	3,500	
	Estimated uncollectible accounts		3,500
	To record provision for bad debts. The treasurer and credit manager reviewed the accounts and decided that $3,500 were doubtful. You later reviewed the accounts with them and agreed with their evaluation.		
(11)	Treasury stock	9,460	
	Cash		9,460
	Purchase of 100 shares: Sept. 16—40 @ 94; Nov. 2—60 @ 95		
(12)	Cash	4,850	
	Treasury stock		4,750
	Retained earnings		100
	Sale of 50 shares purchased November 2.		
(13)	Retained earnings	25,000	
	Capital stock		25,000
	Net entry for declaration and issue of 500 shares as a 50% stock dividend in July.		
(14)	Cash value of life insurance	400	
	Processing costs	9,050	
	Selling and distribution expense	2,975	
	General and administrative expense	1,775	
	Prepaid insurance		14,200
	To amortize insurance per register and to set up portion of $500 premium for increase in cash surrender value of life policy.		
(15)	Processing costs	10,000	
	Selling and distribution expense	550	
	General and administrative expense	800	
	Accumulated depreciation—building		3,300
	Accumulated depreciation—machinery and equipment		8,050
	To record depreciation charges, per schedule:		

Asset	*Annual Rate*	*Cost*	*Processing*	*Selling*	*Office & General*
Building	2½%	$100,000	$ 2,250	$150	$100
Bldg. Ext.	4%	120,000	800		
M & E	12%	65,000	6,700	400	700
M & E	12%	12,500	250		
			$10,000	$550	$800

(16) General and administrative expense		$ 27,000	
Withheld and accrued taxes			$27,000
For accrual of employer's share of payroll taxes at 4½% of total payrolls:			
Factory	$250,000		
Selling and distribution	250,000		
General and administrative	100,000		
(17) Cost of sales		1,440	
Returnable containers			1,440
Net inventory adjustment:			
Of the 1,000 containers not returned, salesmen reported that customers had only 800 on hand at December 31, of which 300 had been used but once and 500 of which were not returnable as they were being used as mixing pots. The inventory record indicates 3,000 on hand at the plant on December 31, but a physical count showed only 2,940 (940 new: 2,000, 50% used).			
Containers with customers	300		
Less—plant adjustment	60		
Net adjustment at $6 each	240		
(18) Miscellaneous material inventory		11,025	
Cost of sales			11,025
To adjust to physical inventory 12/31/52.			
(19) Finished product inventory		900	
Cost of sales			900
To adjust value of 100,000 lbs. in inventory at December 31, to a unit cost of $1.52 per pound	$152,000		
Balance per ledger	151,100		
Adjustment	$ 900		
Material issue cost per perpetual inventory records	$1.02		
Actual processing cost $330,000 divided by 660,000 lbs. sold in 1952	.50		
	$1.52		
(20) Cost of sales		10,100	
Vouchers payable			10,100
To record liability for 10,000 lbs. of raw material in transit at December 31 @ $1.01 per lb.			
(21) NAR Distributors, Inc. stock		2,000	
Retained earnings			2,000
To adjust to quoted bid prices at 12/31/52.			
(22) Federal income tax		48,400	
Federal income tax payable			48,400
To record estimated tax for 1952:			
Net income per books before F I tax	$103,710		
Combined normal tax and surtax:			
52% of $103,710	$53,929.20		
Less	5,500.00		
Computed tax	$48,429.20		

Additional data:

(a) The accrued payroll tax liability recorded by the client included tax on the following exempt payroll: factory $30,000; selling $70,000; general $40,000.

(b) All tax rates used by client may be considered as correct. State franchise, state income tax and federal excess profits taxes are to be ignored.

(c) A summary of transactions from the perpetual inventory records for raw materials follows:

	Pounds	*Amount*	*Average Unit Price*
Balance 1/1/52	35,000	$ 38,500	$1.10
Purchases	731,000	741,500	1.014
Total available	766,000	$780,000	$1.018
Issued for processing	700,000	714,000	1.02
Balance 12/31/52	66,000	$ 66,000	$1.00

(d) Of the 12/31/52 balance of accounts receivable, $9,000 was for containers. You have discussed with the client the accounting treatment accorded returnable containers and have reached agreement with the client that, since the containers remain the property of the company, billings for them should not be taken up in Sales. In this discussion you have suggested alternate ways of treating container losses and amortization in the income statement. For reasons which you accept as valid, the client now has decided to charge container losses and amortization to Selling and distribution expense and to apply as a reduction of this expense any gains on containers not returned.

(e) Your review of the minutes book reveals that the directors intended to freeze $50,000 of retained earnings by means of the 50% stock dividend recorded.

Solution to Problem 1

(a)

1. False. Municipal bond interest distributable from a trust is tax-free to the beneficiary.
2. False.
3. False. Section 22 (b) (5).
4. False. Taxable to the extent of earnings for 1952.
5. False.
6. True. Cattle must be held for 12 months to be treated as capital gain.
7. False.
8. True. Section 22 (b) (12).
9. True. Section 22 (b) (11).
10. True. Section 117 (k) (1).
11. False. Trade-ins do not give rise to gain.
12. False. Long term gain. Section 117 (j) (3).

(b)

1. False. Cost or market rule not applicable to lifo inventories.
2. False. Anticipated discounts are not deductible.
3. False. Ordinary loss. Section 117 (j) (1).
4. False. Upon election the amortization commences in the month or year following acquisition. Neither election would give a figure of $6,500.00.
5. False. Allowable amount must be paid within 60 days of the close of the year.
6. False. His home is assumed to be his place of business.
7. False.
8. False. Interest paid to carry tax-free investments is not deductible.
9. False. Percentage depletion is limited to 50% of net income before depletion.
10. False.
11. False.
12. False. The casualty loss cannot exceed the basis of the property.

Solution to Problem 2

(a)

Collection on installment sales in 1952:

1950 sales	$ 24,020.00
1951 sales	274,820.00
1952 sales	191,910.00

Adjusting Entries

(1)

Unrealized gross profit—1950	8,407.00	
Unrealized gross profit—1951	93,438.80	
Unrealized gross profit—1952	71,006.70	
Earned gross profit		$172,852.50

To record realization of profit on installment sales collections as follows:

1950	35% of $ 24,020.00
1951	34% of 274,820.00
1952	37% of 191,910.00

(2)

Unrealized gross profit—1951	$ 748.00	
Repossessed goods		748.00

To remove from the inventory of repossessed goods the unrealized gross profit contained therein (34% of $2,200.00) and to state the inventory at the unrecovered cost portion of the $2,200.00 receivable.

(b)

The theory of installment sales accounting is that the receivable represents two elements—unrealized profit and unrecovered cost. Consistent with this theory each dollar collected is assumed to be part cost recovery and part profit realization. The balance of the receivable at the date of repossession reduced by the portion of unrealized profit remaining therein leaves a figure which represents the unrecovered cost of the repossessed goods. This is the basis of valuation used in part (a). As a result of entry 2, the inventory is valued at $1,452.00. If this amount is in excess of $1,700.00 minus the estimated cost of disposal the inventory should be written down to the lower figure.

As an alternative to the above treatment, it might be argued that the goods should be valued at cost minus total collections. This amount would be determined as follows:

Cost of original sale (66% of $5,400.00)	$3,564.00
Collections	3,200.00
Inventory value	$ 364.00

The objection to this method is that the installment theory of accounting is completely abandoned and, further, the method may result in substantial understatements of inventory.

Solution to Problem 3

RICHARDSON'S CHEMIX, INC.
Work Sheet
December 31, 1952

	Balance per Books		*Adjustments*		*Balance Sheet*	
Account Title	*(Debit)*	*(Credit)*	*(Debit)*	*(Credit)*	*(Debit)*	*(Credit)*
Cash	$ 113,960				$ 113,960	
Accounts receivable—Trade	104,800			(2) 9,000	95,800	
Containers in hands of customers			(4) 6,300		6,300	
Estimated uncollectibles		3,400		(8) 100		3,500
Finished product inventory	152,000			(17) 3,000	149,000	
Raw materials inventory	66,000		(16) 10,100		76,100	
Miscellaneous materials inventory	19,025				19,025	
Returnable containers	16,560		(1) 7,440	(4) 4,560	19,440	
Accumulated amortization—returnable containers			(4) 2,700	(3) 9,000		6,300
Prepaid insurance	2,400				2,400	
Cash value of life insurance	3,900				3,900	
Nar Distributors, Inc. stock	25,000			(14) 2,000	23,000	
Land	10,000				10,000	
Building	220,000				220,000	
Accumulated depreciation—Building		28,300				28,300
Machinery and equipment	77,500		(11) 40,000		117,500	
Accumulated depreciation—Machinery & equipment		43,050		(12) 800		43,850
Unamortized bond discount and expense			(5) 4,740	(7) 60	4,680	
Vouchers payable		49,575	(6) 5,000			44,575
Accrued interest payable				(6) 2,500 (5) 2,500		5,000
Withheld and accrued taxes		17,020	(13) 6,300			10,720
Federal income taxes payable		48,370		(19) 4,780		53,150
Installment contract payable—current				(11) 30,000		30,000
Mortgage bonds payable		197,760		(5) 2,240		200,000
Long term installment contract				(11) 10,000		10,000
Capital stock		75,000				75,000
Paid-in surplus		46,920		(10) 25,000 (9) 100		72,020
Retained earnings		251,150	(9) 100 (10) 25,000 (14) 2,000			224,050
Treasury stock	4,710				4,710	
Sales		1,615,000	(2) 9,000			1,606,000
Cost of sales	1,017,515		(15) 11,025 (17) 3,000	(1) 7,440 (16) 10,100 (18) 27,450	986,550	
Processing costs applied		357,000	(18) 357,000			
Processing costs	329,875		(12) 800 (13) 9,900	(15) 11,025 (18) 329,550		
Selling and distribution expenses	305,525		(3) 9,000 (13) 8,100	(4) 4,440	318,185	
General and administrative expenses	210,375		(8) 100	(13) 24,300	186,175	
Other additions and deductions	5,000		(7) 60	(6) 2,500	2,560	
Federal income taxes	48,400		(19) 4,780		53,180	
	$2,732,545	$2,732,545	$522,445	$522,445	$2,412,465	$2,412,465

RICHARDSON'S CHEMIX, INC.
December 31, 1952
Adjusting Journal Entries

(1)		
Container inventory	$ 7,440	
Cost of sales		$ 7,440
To correct various journal entries affecting containers so as to restate containers balance at $24,000.00 (cost).		
(2)		
Sales	$ 9,000	
Accounts receivable—Trade		$ 9,000
To reverse balance remaining in sales for containers and to recognize in memo accounts—1,000 containers outstanding at end of year @ $9.00.		
(3)		
Selling and distribution expenses	$ 9,000	
Accumulated amortization of containers		$ 9,000
To provide for amortization of containers during the year. Cost of each container is $6.00 expected usage 6 times equals $1.00 per billing. 9,000 units billed during the year.		
(4)		
Accounts receivable—containers	$ 6,300	
Accumulated amortization of containers	2,700	
Containers		$ 4,560
Selling and distribution expenses		4,440
To recognize receivable for 700 containers used by customers (500 accounted for and 200 which customers apparently are not going to return). Profit on write-off is credited to selling and distribution expense and is net after write-off of 60 units short in physical—see schedule attached.		
(5)		
Unamortized bond discount and expenses	$ 4,740	
Mortgage bonds payable		$ 2,240
Accrued interest on mortgage bonds		2,500
To correct entry for recording of bond issuance at 10-1-52.		
(6)		
Vouchers payable	$ 5,000	
Accrued interest on mortgage bonds		$ 2,500
Other additions and deductions)		2,500
To remove from vouchers payable for statement purposes the amount of interest on mortgage bonds and to correct interest expense. (Note: There are no other interest obligations in the trial balance—no information on machinery contract; therefore, it was assumed that the 5,000 interest entry in voucher distribution represents mortgage and that the amount was unpaid at 12-31-52.)		
(7)		
Other additions and deductions (Bond amortization)	$ 60	
Mortgage bond discount & expenses		$ 60
To amortize bond discount for 3 months of 237 month life.		
(8)		
General and administrative expenses	$ 100	
Estimated uncollectable accounts		$ 100
To increase estimated uncollectables to agreed amount of $3,500.00.		
(9)		
Retained earnings	$ 100	
Paid-in surplus		$ 100
To correct recording of profit on the sale of treasury shares.		
(10)		
Retained earnings	$ 25,000	
Paid-in surplus		25,000
To record board action of freezing $50,000.00 in retained earnings. Previous entry was made for 500 shares of stock dividend declared and issued at stated value of $50.00 per share.		
(11)		
Machinery and equipment	$ 40,000	
Installment contract payable-current		$ 30,000
Long term installment contract		10,000
To correct recording of machinery and equipment purchased in November.		

(12)

Processing costs	$ 800	
Accumulated depreciation—Machinery		$ 800

To correct depreciation provision on machinery purchased in November.

(13)

Processing costs	$ 9,000	
Selling and distribution	8,100	
Withheld and accrued taxes	6,300	
General and administrative		24,300

To correct accrual for employers share of payroll taxes and to redistribute expense

	Given	*Adjustment*	*Final*	*Tax @ 4½%*
Factory	$250,000	$ 30,000	$220,000	$ 9,900
Selling	250,000	70,000	180,000	8,100
General and Administrative	100,000	40,000	60,000	2,700
	$600,000	$140,000	$460,000	
@ 4½%	$ 27,000	$ 6,300	$ 20,700	$20,700

(14)

Retained earnings	$ 2,000	
NAR Distributors, Inc. stock		$ 2,000

To reverse entry made in error—adjusting stock to market price at year end.

(15)

Cost of sales	$ 11,025	
Processing costs		$ 11,025

To reclassify adjustment for miscellaneous materials in physical inventory. Adjustment originally made to cost of sales in error.

(16)

Raw material (in transit)	$ 10,100	
Cost of sales		$ 10,100

To correct entry for in transit materials erroneously charged to cost of sales in original entry.

(17)

Cost of sales	$ 3,000	
Finished product inventory		$ 3,000

To adjust ending inventory to valuation shown in schedule.

Amount per schedule	$2,100
Amount previously adjusted	900
	$3,000

(18)

Processing costs applied	$357,000	
Processing costs		$329,550
Cost of sales		27,450

To close processing costs actual and applied with overabsorbed costs to cost of sales.

(19)

Federal income tax	$ 4,780	
Federal income tax payable		$4,780

To adjust tax provision per attached schedule.

Schedule (1)

RICHARDSON'S CHEMIX, INC.
December 31, 1952
Schedule of Returnable Containers

Description	*Units*	*Cost*	*Amortization*
Purchases as recorded	4,000	$24,000	—
Amortization @ 1.00 per shipment to customers			$9,000
To remove:			
60 shortgage in physical			
500 not returnable			
200 used by customers	(760)	(4,560)	(2,700)
Adjusted balance 12-31-52	3,240	$19,440	$6,300

Schedule (2)

RICHARDSON'S CHEMIX, INC.
December 31, 1952
Schedule of Finished Goods
(Computation of Ending Inventory Valuation)

	Units	*Total Price*	*Unit Price*
Beginning balance, January 1, 1952	60,000	$ 92,000	
Added from production—Materials	700,000	714,000	$1.02
—Overhead applied	—	357,000	.51
	760,000	$1,163,000	
To cost of sales for net sales during year	660,000	1,011,900	
Ending balance per books	100,000	$ 151,100	$1.51
Less: Adjustment to cost of sales for year and inventory valuation	—	(2,100)	.02
Corrected valuation—12-31-52	100,000	$ 149,000	$1.49

Actual processing costs—before adjustments		$329,875
Add: Adjustment #12 for machinery depreciation	$ 9,900	
Adjustment #13 for payroll taxes	800	
	$10,700	
Less: Adjustment #15—entry in error	11,025	(325)
		$329,550

Actual unit cost of processing (700,000 units processed)	$ .47
Average cost of issues	1.02
Ending inventory valuation	$1.49

Schedule (3)

RICHARDSON'S CHEMIX, INC.
December 31, 1952
Supporting Schedule—Taxable Income and Provision for Income Tax

	Income Account (*Dr.*)	Income Account (*Cr.*)
Taxable income as reported		$103,710.00
Adjustments:		
1. Containers—cost reversal		7,440.00
2. Containers—selling price reversal	$ 9,000.00	
3. Container amortization	9,000.00	
4. Profit on disposal of containers (treated as ordinary income)		4,440.00
6. Interest on bonds		2,500.00
7. Amortization of bond discount	60.00	
8. Additional bad debt provision	100.00	
9. See below		
12. Depreciation on machinery & equipment	800.00	
13. Adjustment of withholding tax liability		6,300.00
16. Correcting raw material in transit		10,100.00
17. Revaluation of ending finished products inventory	3,000.00	
	$21,960.00	$134,490.00
Total debits		$ 21,960.00
Adjusted book income		$112,530.00
Add: (1) Profit on sale of treasury shares—short term gain with no offsets—fully taxable (AJE #9)		100.00
(2) Officers life insurance		100.00
Adjusted taxable income		$112,730.00
Income tax @ 52%	$58,619.60	
Less: Surtax exemption	5,500.00	
Revised tax liability	$53,119.60	
Liability for current year	$53,120.00	
For prior year deficiency	30.00	
	$53,150.00	
Liability as originally recorded	48,370.00	
Additional provision	$ 4,780.00	

ASSOCIATION NOTES

E. Burl Austin

DISTRICT OF COLUMBIA

The George Washington University:

Frederick C. Kurtz has left the University to accept a position as assistant professor of accounting at the University of West Virginia.

Wilbur E. Benson has been appointed instructor effective for the spring semester.

ARKANSAS

University of Arkansas:

Robert Reynolds has resigned to enter public practice in Indiana.

Roy H. Jones has resigned to enter public practice in Dallas, Texas.

Horace R. Brock has joined the staff as assistant professor.

CALIFORNIA

Stanford University:

J. Hugh Jackson left in March for Manila to assist in the reorganization of the College of Business Administration of the University of the Philippines.

ILLINOIS

University of Illinois:

Kenneth Perry and A. R. Wyatt have been promoted to the rank of assistant professor.

Norton M. Bedford of Washington University in St. Louis joined the staff in February as an associate professor.

Lloyd Morey, who has been serving as Acting President of the University of Illinois since September, 1952, has been named President of the university.

Paul M. Green has been named a member of the Advisory Committee on Fiscal Organization and Procedures of the Secretary of Defense.

Dorothy Litherland gave a talk before the Peoria Chapter of NACA in December on "How Do We Educate Accountants."

Rodger E. Karrenbrock recently passed the California CPA examination.

Two groups of foreign students have attended the university recently to receive special instruction in accounting. They included 19 accountants from France and 9 accountants from China (Taiwan).

KANSAS

Kansas State College:

William Clark and Ted O. Dodge are currently on leave until September, 1954.

Serving on the staff as temporary instructors are Gilbert Dodge, Chester F. Templer and Jerry N. Naylor.

LOUISIANA

Louisiana State University:

The University was host in January to the first conference of its kind held in the South, a High-Speed Computer Conference. In attendance were businessmen, office managers, accountants, engineers, physicists, chemists, and statisticians. Speakers of national prominence appeared on the program.

Tulane University:

Peter A. Firmin has returned to the staff after working toward a Ph.D. at the University of Michigan.

Paul C. Taylor has been appointed to the Louisiana Mediation Board. Taylor has delivered addresses recently on direct costing as a management tool before the International Cost Conference in Los Angeles and the Accounting and Tax Symposium at the University of North Carolina. Taylor has also recently given talks before the New Orleans chapter of NACA and the National Association of Credit Men.

Peter A. Firmin has delivered addresses recently before the Mississippi Southern Accounting and Tax Institute and before the New Orleans chapter, Louisiana Society of CPA's.

MASSACHUSETTS

Massachusetts Institute of Technology:

Ronald H. Robnett, Professor of Accounting and Associate Dean of the School of Industrial Management, died unexpectedly on February 16.

NEBRASKA

University of Nebraska:

The present accounting staff includes the following members: O. J. Anderson, J. O. Burnett, D. F. Cole, G. M. Darlington, R. C. Dein, R. F. Alberding, C. R. Purdy, and E. B. Schmidt.

NEW JERSEY

Rutgers University:

The University, with co-sponsorship by various organizations of professional accountants, was host in November to the Fourth Annual Accounting Conference.

NEW YORK

Syracuse University:

ARNOLD W. JOHNSON has resigned to accept a position at New York University.

Recent appointments include WALTER G. KELL as associate professor and chairman of the Accounting Department, WILLIAM T. JEROME as associate professor and director of the Army Comptroller School, and ROBERT G. BARTH as assistant in the Accounting Department.

HORACE J. LANDRY is serving as program chairman for the Syracuse chapter of NACA.

NORTH CAROLINA

University of North Carolina:

Under the joint sponsorship of this University, Duke University, and the North Carolina Association of CPA's, the University was recently host to the Fourteenth Annual Symposium on Accounting and Taxation.

OHIO

Western Reserve University:

T. M. DICKERSON addressed the Public Accountants Society of Ohio in January on the subject "Incorporation of a Partnership."

OKLAHOMA

University of Tulsa:

The Eighth Annual Conference of Accountants, sponsored by the Oklahoma Society of CPA's and other accounting organizations, will be held on the University campus in April.

PENNSYLVANIA

Dickinson College:

On three successive Saturdays beginning April 24, the College will be host to the Institute of Federal and State Taxation. Organizations of accountants, attorneys, and life insurance counsellors are cooperating, and the aim of the College is to make the institute the outstanding tax conference conducted anywhere in the United States.

Pennsylvania State College:

The Economics and Commerce Department has been changed to the School of Business, and CHARLES J. ROWLAND has been named head of the Department of Accounting and Business Statistics.

G. KENNETH NELSON has been promoted to the rank of associate professor.

ROGER ROBERG, who is on leave of absence this year, has been promoted to the rank of assistant professor.

GEORGE WARNER has joined the staff as instructor.

TENNESSEE

University of Tennessee:

WILLIAM C. HENRY, who has been promoted recently to the rank of professor, has been elected to the State Council of the Tennessee Society of CPA's.

ALBERT M. MILLER has been elected president of the Tennessee Society of CPA's.

WILLIAM C. HENRY, FOREST C. CARTER, and WARREN L. SLAGLE recently discussed the subject "Application of Burden to Production" before the Knoxville chapter of NACA. SLAGLE recently addressed the Knoxville chapter of the American Institute of Industrial Engineers on the subject "Various Theories Underlying Burden Rates."

TEXAS

Texas Christian University:

ELLIS M. SOWELL, professor of accounting and Dean of the School of Business, resigned in January, 1954, to accept a position as administrator of staff relations for Haskins & Sells.

JAMES HENRY KEY is serving as Acting Dean during the spring semester.

VIRGINIA

University of Richmond:

SAM BAKER has been elected president of the Virginia Society of Public Accountants.

College of William and Mary:

JOHN S. QUINN has been appointed coordinator of the Evening Division.

WEST VIRGINIA

West Virginia University:

FREDERICK C. KURTZ and ROY W. MAYBERRY, JR., have been appointed to the staff as assistant professor and instructor, respectively.

RAYMOND W. COLEMAN and KENNETH E. LAMBERT are members of the board of directors of the West Virginia Tax Institute which sponsored a conference in Charleston in December.

BOOK REVIEWS

Arthur M. Cannon *Editor*

Accounting and Auditing

Four Essays in Accounting Theory. F. Sewell Bray. (Published for the Incorporated Accountants' Research Committee; Oxford: Oxford University Press, 1953. Pp. 94. $3.25.)

This book, composed of four addresses delivered during 1951 and 1952, represents the first publication of Professor Bray as the first Stamp-Martin Professor of Accounting. Inasmuch as the lectures were given at various places there is some apparent overlapping. Also throughout there is ample evidence that the essays are a continuation of the development of the basic assumptions and ideas expressed in previous works.

The Stamp-Martin Research Chair of Accounting of the Society of Incorporated Accountants represents a new development in the relationship of university professorships and professional organizations. The holder of the professorship will present four research lectures annually under the Society's auspices and will direct much of the research work of the Incorporated Accountants' Research Committee. The prevailing conditions and purposes related to the creation of the Chair were expressed by Leo T. Little ("The Stamp-Martin Chair of Accounting," *Accounting Research*, January, 1953, Pg. 103) as follows:

> "It can hardly be denied that the lack of an institutional link between the university Professorships and the professional bodies has militated against the cross-fertilization of ideas between the academic accountant and the practical accountant; has tended to impede the ready acceptance by the profession of much of the more fundamental work that has been going on in the universities—whether directly in accounting, or, almost equally important, in the impinging areas of applied economics and econometrics; and has deprived the academician of what could have been an invigorating influence from the outside world. The founding of this new Chair is a healthy corrective."

This innovation in England warrants observation by accountants both in England and the United States.

The selection of F. Sewell Bray as the first holder of the Professorship appears to this reviewer to have been a natural one. He has been Senior Nuffield Research Fellow in the Department of Applied Economics at the University of Cambridge, a senior partner of a London firm of Chartered Accountants, a member of the Institute of Chartered Accountants in England and Wales and of the Society of Incorporated Accountants, and Joint Editor of the relatively new British accounting publication, *Accounting Research.* Through his writings Professor Bray indicates a deep faith in the future of accounting and an especial interest in integrating other disciplines such as economics, philosophy, and statistics into the development of accounting theory. His works are related to the accounts for enterprises as well as those of the national economy (Social Accounting). His first well-known work was *Design of Accounts* (with H. B. Sheasby, 1944, with subsequent revisions), primarily related to accounting under the Companies Acts. Subsequent monographs include *Precision and Design in Accounting* (1947), *Farm Accounts* (with C. V. Dawe, 1948), *The Measurement of Profit* (1949), *Social Accounts and the Business Enterprise Sector of the National Economy* (1949), and *The Accounting Mission* (1951).

The basic theme throughout this book of essays, as well as other research works of the author, is the thesis that it is possible to establish a logical and relatively simple framework of accounting statements or system of accounts which adequately presents the activities and position of every type of entity whether a business, household, or government, as well as any consolidation of similar entities. Thus the theme might be described as a pure theory of accounting which attempts to determine and apply universal concepts of form, structure, and measurement to all economic activity which is to be reviewed by means of accounts. In the development of this basic theme the author's mental preferences for the association of the disciplines of economics, philosophy, and statistics are apparent. Likewise is evident throughout the author's desire to provide a link between the results of research and accounting practice.

Upon the general economic concepts of periodic income and wealth Professor Bray devises his formal principle of accounting design which is expressed by a group of related accounts or statements summarized as follows:

(1) An Operating Account (similar to an Income Statement) to indicate the measurement of the periodic operating income of the entity as well as the input allocations of labor and capital and the output value added by the entity;

(2) An Appropriation Account (similar to the non-operating section of the Income Statement and the Reconciliation of Retained Earnings Statement) to indicate the total income from all sources, transfers by taxes and dividends, and the retained income of the period, followed by changes in reserves, ending with the accumulated saving of the company;

(3) A Resting Account (similar to Statement of Sources and Applications of Funds) to indicate the expenditures on plant assets and inventories and changes in various other asset categories and the financing aspects of earnings, depreciation charges, borrowing, and stockholder transactions;

(4) A Balance Sheet Account to present the assets, liabilities, and capital from all accumulated transactions, i.e., an expression of the wealth of the entity.

The first essay entitled "Accounting Principles" originally was presented as an address on September 15, 1951, at a course for Incorporated Accountants in Caius College, Cambridge. Professor Bray at the outset is concerned with accounting principles as distinguished from conventions, rules, and practices. He defines a principle as a fundamental concept of a permanent nature and not in the sense as being a rule to guide conduct. He then enumerates and discusses five such principles: (1) The idea of double-entry; (2) A well-defined entity; (3) A continuing entity concept; (4) Consistent employment of accounting methods; (5) Acceptance of the two general economic concepts of periodic income and wealth as central and fundamental to accounting.

In reviewing technical practices to which accounting principles give rise, he points out a dichotomy between the real and the financial. In particular, he questions the significance of the asset classifications, current and fixed, which he assumes basically is found in applying the test of realization in the ordinary course of business. Rather, he feels a more significant classification is that of *real* or physical assets and financial assets or money claims. In reviewing the problems of inventory profits and losses in the light of these principles he concludes as follows:

> In so far as the major portion of the inventory of an enterprise *does* constitute a fixed asset necessary to the *continuation* of effective operations, it is my view that it should be classified as such in the balance-sheet. In this case, it also seems to me that inventory profits or losses should be excluded from the measurement of operating income, but I add the proviso, perhaps only very exceptionally required, that a loss must be recovered by appropriation out of either previously accumulated price-change profits (the usual means), or current income, where not to do so would do anything to impair the protection of contributed money-capital implied by legal sanction. I also wish to make clear my view that where inventories can be liquidated without doing hurt to long-run stability and operating activity of an enterprise, then there is little need to bother with inventory profits or losses, for then the inventories themselves are little more than speculative asset claims. The essence of the inventory problem resides in the fundamental distinction between fixed and speculative holdings."

The second essay, "Company Accounting," contains the substance of a paper given on May 23, 1952, to the Statistical and Social Inquiry Society of Ireland in the Royal Irish Academy. In Ireland the legal requirements on disclosure by companies are largely those of the Companies Act of 1908, whereas there have been substantial changes in England by the Acts of 1929 and 1948. In addition to reviewing some aspects of the disclosure requirements of these Acts, Professor Bray then sets out to present the accounting requirements of an ideal Companies Act. As is in evidence throughout all of his writings, he is concerned with the problems of financial disclosure for enterprises as well as economic analysis and social accounting. In addition to discussing the form and content of the four statement forms indicated above in this review, he comments upon his views as to price level measurement adjustments. A summary of his view of fixed asset adjustments is as follows:

> "The critical requirement is to revalue fixed assets at the accounting date in order to measure the amount of depreciation at the current price level which is to be charged to the operating account. In so far as technical mechanics are concerned, the repriced cost of fixed assets, less accumulated depreciation to the beginning of the accounting period on this repriced basis, should be compared with the original cost written-down value. The difference will represent the valuation adjustment which should be passed through to the price change account, an account which, in my view, is best shown among the capital reserves. Current depreciation would then be deducted to arrive at the written-down value on a current cost basis. . . . Excess provisions arising from falling values should be taken to the credit of operating account in exactly the same way as the difference between under provisions were debited to the same account. As soon as the credit balance on the price change account has been exhausted no further transfers should be made, and depreciation accounting will have to revert to an original cost basis if contributed money capital is to be preserved."

The third essay, "Accounting and Statistical Relationships," was presented on July 20, 1952, at a conference of the Association of Incorporated Statisticians in St. Hugh's College, Oxford. Professor Bray herein expresses the view that the real future of accounting theory in association with statistics lies not so much in sampling and similar techniques but rather in a mature development and understanding of the relatedness of aggregate categories in formal patterns of account. He presents the system of four statements enumerated previously in this review and indicates by equations the relationship of an interconnected system of accounts in which he believes there are a number of variable aggregate categories which might be capable of some degree of correlation. Through the use of statistical tools in the study of the relationships of the various categories he looks toward the development of "expectation accounting."

The fourth essay, "Accounting Form," was presented on September 29, 1952, at a course for Incorporated Accountants in Balliol College, Oxford. In this essay Professor Bray is concerned with the use of statements in expectation accounting with particular emphasis upon the operating account. In stressing the notion of "value added," he states that a well-designed operating account should be capable of revealing over time those combinations of labor and capital inputs which maximize output, or, as designated by the economists, the production function. He indicates that such an account must hold to the fundamental distinction between fixed and variable costs. He suggests that the standards of cost accounting practice superposed in the operating accounts appear to be too absolute in that by themselves they fail to prescribe upper and lower limits of tolerance, and he then presents a statement for management use

indicating amounts for actual, expectation, tolerance limits, and variances beyond tolerance.

In the appendix is included a report of a subcommittee of the Research Committee of the Society of Incorporated Accountants entitled "The Measurement of Productive Efficiency." The concept of "value added" as presented in the operating account receives considerable attention in this report as well as the writings of the author and is designed to present the variables providing a basis upon which measures of productivity may be sought in financial and related physical terms and ratios of efficiency may be constructed.

American accountants must not assume that important developments in accounting theory and practice are taking place almost entirely in the United States. The research monographs of the Institute of Cost and Works Accountants, the series of volumes of reprints of outstanding articles being published by the Association of University Teachers of Accounting, the statements of procedures and principles of the Institute of Chartered Accountants in England and Wales, and the works of Committees and other publications of the Society of Incorporated Accountants attest to the results of the activities of accounting professional organizations in England. The publications of individual authors, likewise, are growing in quantity and quality. In particular, the several works of Professor Bray previously reviewed in the ACCOUNTING REVIEW at various dates by Mary E. Murphy, are worthy of consideration, and the book herein reviewed is recommended highly to all accountants, particularly to those who desire to be introduced to the far reaching type of research and writing now under way.

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Audit Working Papers. William B. Jencks and Walter C. Burnham. (New York: Prentice-Hall, Inc., 1953. Pp. vii, 310. $5.95.)

The authors indicate in the preface that they have hoped to develop a reference work for students and for practitioners, especially the individual practitioner who may not have developed for himself an "office manual" such as is in common use in large accounting firms. They have tried "to demonstrate how working papers are used to fulfill the objectives of the independent accountant's examination." By emphasis on the purpose of the working paper and by sufficient illustrative variations they hope to "promote the growth of ability" to develop working papers for any given situation.

Paper 11″×8½″, with plastic ring binding, provides for two parallel columns per page, each column approximating a normal sized page. Most of the work sheets illustrated were handwritten on sheets seventeen inches wide (thirteen columns and name space) reduced to approximately 10″×6½″ in reproduction. Use of this double-sized page has made it possible to reproduce legible working papers without folded sheets. Approximately 60% of the space is devoted to reproductions of working papers.

The book is divided into seventeen chapters, the last of which is a complete set of audit working papers for a small publishing company, including a long-form audit report and financial statements. Chapters 1 and 2 cover the purpose of working papers, indexing and filing working papers, auditor's review of internal control, trial balances and adjusting entries. Chapters 3 to 11 cover the complete chart of accounts as follows: Cash, Receivables, Inventories, Prepaid and Deferred items, Investments, Fixed Assets, Equities, and Income and Expenses. Each of these chapters includes (1) a statement of the major objectives of the audit of the particular item, (2) a discussion of internal control relative to the particular item, and (3) explanations of the illustrative working papers included, together with comments as to possible variations. Chapter 12 is devoted to working papers for consolidated statements. The remaining four chapters contain no reproductions of working papers and are entitled as follows: The Short-form Report, The Long-form Report, Review of the Audit Working Papers, and The Permanent File.

The analysis of the objectives of working papers in Chapter 1 is excellent. This together with the statement of specific purpose in each chapter should greatly aid the user of the book in maintaining perspective as to objectives. The discussion of proper internal control relative to each item (chapters 3 to 11) should be helpful in suggesting some limitation on the reliability of recorded information in case proper internal control is not present. The two chapters on audit reports, while not clearly covered by the title of the book, increase its usefulness. The chapter on review of audit working papers, about which relatively little has been written elsewhere, is presented "in the hope of engendering additional study" of this important part of the whole audit task.

While the book indicates at many points what matters the auditor should investigate, what evidence he should seek, and how certain transactions should be presented in accounts and statements, it does not take the place of a book on auditing procedures and standards. It would seem to be most useful to those already having a knowledge of auditing, or to others when used in conjunction with a book on auditing.

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Distribution Costs. J. Brooks Heckert and Robert B. Miner. (New York: The Ronald Press Company, 1953. Pp. ix, 386. $6.50.)

The diminishing proportion of national income going into "necessity goods" poses problems of marketing efficiency both for the economy and for the firm. As for the firm, it may live or die as a result of its degree of competence in wringing results from marketing dollars. According to the authors, "This book has been written to aid accountants and marketing executives in the difficult task of the analysis, supervision, and control of selling costs. It offers a basic plan and suggestions of illustrative methods which will help those who have to work out and use procedures suitable to specific situations. In presenting each topic the authors outline the

fundamental problems to be solved and describe the methods and techniques which have been successfully used by different types of concerns."

The book is a revision of Heckert's *The Analysis and Control of Distribution Costs*, published in 1940. The order of material—and, in general, the content—is essentially the same as in the 1940 edition. The new edition is divided into two parts: Part I is on "Analysis of Distribution Costs"; Part II is entitled "Controlling and Planning of Distribution Costs." Two new chapters and a bibliography have been added. One new chapter is entitled "The Gross Profit and Retail Inventory Methods," and is a reasonable addition to a book that is intended to present a survey of the field. The other new chapter is on the "Contribution Margin Approach to Distribution Cost Analysis." The authors' provide a "thorough treatment of the net profit and contribution margin approaches to distribution cost analysis."

The "Net Profit" method involves charging a share of all the costs of a business to the element (*e.g.*, department, territory, product, *etc.*) under analysis. The "Contribution Plan" is a method of charging to a department only such expenses as are directly incurred by the department and which would disappear if the department were discontinued. Professors Heckert and Miner strongly favor the "Net Profit" plan. Their logic is that since dependable bases of allocation are available for the bulk of indirect expenses, allocations should be made to provide additional information of great value in management. They maintain that after all the contribution plan offers nothing which cannot be obtained under expense distribution plans, and that the so-called "contribution" is simply "profit after direct departmental expense" which is a phase of analysis under the "net profit" plan. They conclude that: "To accept the contribution plan as a *regular* procedure of expense analysis and control is to deny the fruits of years of progress toward more exact and meaningful procedures."

The authors do a creditable job of surveying the purposes and methods of distribution cost analysis and control. They explain methods of performing costs studies, of classifying expenses, and of allocating expenses. Their descriptions are well organized, clear, and couched in a manner that should make them valuable for both accountants and marketing men. The book could be used as a source of methods for analysis. In the matter of methods for control and correction, however, the marketing manager or accountant would want to supplement this book with manuals, textbooks, and other cost and management publications from his own field.

The methods and analyses described pertain of course primarily to internal records. The approach is practical, and there are repeated cautions to the reader concerning the spurious accuracy of some allocations and the extreme variations between specific situations. (There seems to be a tendency to disregard these admonitions in some of the recommendations for use of analytical results.) Further, the authors offer much of value in their discussion of standards. However, they mention but do not develop the idea of shaping standards with the help of *external* data. The one logical justification for the collection and analysis of cost information is the use of the information to control, correct, and improve the activities represented by the figures. Effective management action requires utilization of all possible comparisons of internal activities and data with the activities and data of outside sources. For example, there is the *Departmental Merchandising and Operating Results of Department Stores and Specialty Stores* issued annually by the Controllers Congress of the National Retail Dry Goods Association. The book under review would be an ideal vehicle for emphasizing the value of such data for purposes of comparison with an individual store's own internal experience. If, through trade associations, universities, or government, all distributive organizations could have as complete a report on competitors' costs as is contained in the N.R.D.G.A., "*Results*," marketing could be much more efficient. Not only would the marketing activities benefit from such comparative data, but the very cost analyses themselves would tend to become more efficient through increased accuracy.

With reference to college use, the book may be recommended for accounting and marketing students. It would serve well at least as a reference for accounting students, and as a text in possibly even a full-credit course for marketing students. It would be more useful if it provided problems.

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Accountants' Index, Tenth Supplement. American Institute of Accountants. (New York: American Institute of Accountants, 1953. Pp. 499. $10.00.)

Bibliography of Accounting and Tax Articles. Cecil E. Coe. (Inglewood California: Cecil E. Coe, 1953. Pp. 275 approximately. $10.00.)

For the first time in several years there are two new bibliographies in the field of accounting.

The Institute published the tenth supplement, covering the years 1951 and 1952, to the original index published in 1920. About 20,000 entries for names of authors, subjects, and titles are included in the *Index* and the publishers directory lists about 500 magazines, book publishers and trade associations. Generally, the references are in standard form with information relating to author, title, publisher, place of publication, date, and number of pages. However, some references under subject headings are incomplete and require examination of the entry.

Headings and subheadings are used in the *Index* to classify items on a particular subject and cross-references are made to related subjects. For example "auditing" has 23 subheadings ranging from "audit program" to "year-end" and 18-cross-references ranging from "current accounting and auditing problems, a department" to "testing and sampling."

The *Index* is a general purpose index of articles, pamphlets, and books. Articles and special departments (students, technical and professional, and correspondence) of magazines are indexed, which facilitates tracing the development of an idea. Secondary references to reprints and summaries make it easier to find material

in a limited library. A tabulation of a random sample of items in the *Index* indicates that books and pamphlets are responsible for about 30% of the references. This high fraction is caused in part by indexing each chapter in a book in addition to the book itself. The fact that the four most-commonly cited magazines (*Journal of Accountancy*, *New York C.P.A.*, *N.A.C.A. Bulletin* and *Accountant*) are responsible for only 20% of the entries reflects the broad coverage of the *Index*. Some of the sources (many of which are published in Canada, England or Australia) to which relatively few references are made are: *Accounting Research*, *Auditgram*, *Canadian Chartered Accountant*, *Columbia Law Review*, *Land Economics*, *Tax Policy*, *Trusts and Estates*, *Yale Law Review*, congressional committees, and government bureaus.

Many accountants have ready access to and make regular use of the "standard" accounting magazines, but the *Index* makes it easier to use magazines, books and institute proceedings that may have only a few references to accounting and which are not readily available.

Coe's *Bibliography* is a new-comer to the field. There are numerous differences between *Bibliography* and *Index*. *Bibliography* uses a loose-leaf binder and irregular paging to provide for insertions. Although it contains about 275 pages the last is numbered 728. The list of abbreviations for publications and publishers (later used for references) included in the volume contains 74 items. The scope of *Bibliography* is limited primarily to the "standard" accounting and tax magazines published in America and a limited number of books.

Coe does not specify the period covered although it seems to run from 1946 to 1952. The inclusion of only about 5,000 references leaves doubt about the degree of completeness even for the magazines and books indexed. Coe uses headings to classify references but seldom refers to other headings (one must look under "income tax," "section," and "tax" to find articles on income taxation but only "tax" has a cross-reference). Subheadings are not used and it is difficult to determine the logic of the arrangement of the numerous entries under some more important topics. For example, one gains the impression that the 150 or so items under "auditing" are in some logical sequence but none is indicated.

Coe omits the author's name and the pages from a reference. This causes difficulty in finding who has written what and in locating articles in bound magazines. Four magazines (*Taxes*, *New York C.P.A.*, *N.A.C.A. Bulletin* and *Journal of Accountancy*) make up about two thirds of all references in *Bibliography* and reflect the scope of Coe's work. Infrequently listed references include *The California Certified Public Accountant*, *Hadley Review*, *Harvard Law Review*, *Methods and Systems*, and *Tax Law Review*.

Bibliography would probably serve adequately for one interested in references to a limited number of sources; but users should bear in mind this important point, if attempting to do exhaustive research.

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Accounting systems—Design and Installation. Second edition. J. Brooks Heckert and Harry D. Kerrigan. (New York: The Ronald Press Company, 1953. Pp. x, 663. $7.00.)

This book is a successor to *Accounting Systems—Design and Installation* by J. Brooks Heckert, 1936. However, it is not merely a "revision." It is really a new production. It is first-rate.

The book is not limited to a description and analysis of accounting records and forms, or to descriptions and analyses of specific accounting systems. The authors state, in their prefatory materials, that "successful systems design rests squarely upon a correct analysis of managerial problems and an understanding of the data needed for their solution. Considerable emphasis is therefore placed on procedures and methods as an administrative technique (a) through which management asserts itself and (b) by which it receives the accounting and statistical data needed to plan, control, and coordinate operations."

Erected upon this foundational philosophy, the organization of *Accounting Systems* is as follows:

	Number of Chapters
PART I. THE METHOD OF SYSTEMS DESIGN	
Role of Accounting in Modern Management	1
Systems Procedures and Methods	1
Organizing for Systems Work	1
Steps in System Building	1
Elements of the Accounting System	1
PART II. THE GENERAL FRAMEWORK	
Chart of Accounts	1
Elements of Ledger Design	1
Design of Subsidiary Ledgers	1
PART III. ACCOUNTING PROCEDURES	
Design of Accounting Procedures	1
Selling, Shipping, Billing, and Collecting	7
Purchasing, Receiving, and Paying	3
Costing and Cost Reporting	6
Summarizing and Closing	1
Other Subsidiary and Auxiliary Records and Procedures	3
PART IV. SPECIAL PROBLEMS OF SYSTEMS WORK	
Accounting Department Organization	1
Design of Accounting Forms	1
Manuals of Procedure	1
PART V. PUNCHED CARD ACCOUNTING	
Principles of Punched Card Accounting	1
Applications of Punched Card Accounting	1
	34

APPENDIX
- Chart of Accounts for a Manufacturing Company
- Chart of Accounts for a Wholesaling Company
- Chart of Accounts for a Retailing Company
- Proof of Machine Posting
- Microfilming
- Unit Sets and Continuous Forms
- Published Sources of Systems Information

From this outline it is apparent that the book is organized by general functional areas rather than by

specific types of accounting systems, i.e., specific chapters for banking, manufacturing, railroads, retail stores, utilities, and so on. In their preface the authors state that the organization of their book "reflects the authors' belief that a knowledge of the procedures and methods applicable to the various business functions is far more valuable to the student and the accountant than brief descriptive data relative to the accounting systems used in different lines of business." The authors nevertheless have woven into their discussion many specific industry situations, liberally accompanied by cases, charts, forms, diagrams, flow charts, and pictures of posting, calculating, punched card, and other labor-saving machines—348 illustrations in all.

The twenty-one chapters devoted to Accounting Procedures (Part III) attest the importance which the authors give to procedures analyses, designs, and objectives; and of putting these procedures into use effectively. These highly important chapters are detailed and well done.

The authors also have very properly woven into their book the full importance of internal check and control as it relates to each accounting procedure, and the importance of internal reporting as an instrument of assistance to management in the control of production, distribution, and other costs.

The final section of the book discusses modern punched card accounting—when to use it to advantage and how, and includes illustrative detailed cases.

The book is well written and set in type which is easy to read. For purposes of the classroom, the book is accompanied by a separate workbook containing questions for discussion and review, and 51 problems intended to test a student's ability to plan procedures, and to design, redesign, or use accounting forms. These questions and problems are arranged by the chapters to which they relate.

Accounting Systems should interest both the accounting practitioner and the academician. It is an excellent addition to the literature of the field of accounting systems.

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Accounting Guide for Defense Contracts. Paul M. Trueger. (Chicago: Commerce Clearing House, Inc., 1953. Pp. 331, $7.50.)

For the first time, a single book contains a discussion of defense contracting problems which may arise from the inception of the contract to completion or termination. The author is to be congratulated on his effort to satisfy the need for a work of this type.

The book begins with the history of cost accounting requirements in connection with Government contracts, the organization and activities of the procurement and audit agencies of the military departments, and the types of defense contracts, together with an analysis of the standard articles of such contracts. Then follows a discussion of the Defense Department requirements with regard to cost accounting systems and systems of internal control, with a complete coverage of "unallowable" costs together with detailed discussions of material, labor, other direct charges, manufacturing overhead, engineering overhead, and selling, general, and administrative expenses as they apply to defense contracts. The author concludes with discussions of terminations, renegotiation, the procedures before the Armed Services Board of Contract Appeals, procedures in connection with Executive Order 10210, and income tax trends in connection with defense contracting problems. The appendices contain reproductions of Section XV of the Armed Services Procurement Regulation (ASPR), the Manual for Control of Government Property in Possession of Contractors (which is Appendix B of ASPR), the "Green Book" (of cost allowance principles), the Renegotiation Act of 1951, and various forms used in connection with defense production.

The author states his intention to present a detailed study of Government contracts and the accounting problems they involve. The detailed regulations, instructions, and forms applicable to defense procurement are constantly changing, and therefore, to the degree that the author achieves this purpose of discussion of detail, his book loses its usefulness and has only short-lived value. To the degree that he merely highlights the considerations of which the contractor should be aware, the book is useful and has lasting value. Some of the detail of this book is now outdated because of the many changes which are constantly taking place in ASPR, the issuance of additional parts of the "Contract Audit Manual," and the resolution of other problems such as the allowance of "true depreciation" of emergency facilities as a cost in contract pricing.

Many of the comments which follow are necessary only because of events subsequent to publication of this book. Other comments attempt to emphasize especially helpful guidance which is given by the author, while a few note errors of omission and commission.

In his history of the efforts at establishing cost accounting requirements in connection with Government contracts, the author refers to the "Contract Audit Manual of the Department of Defense" and states that additional important chapters are still in process of being drafted. The additional chapters to which he refers are Chapter IV, "Audit Procedures," and Chapter V, "Audit Procedures—Terminated Contracts." Parts of Chapter IV and all of Chapter V are now available at the Government Printing Office. At the conclusion of this same introductory chapter, the author says that "This new audit manual should have in it a separate set of cost principles which will be applicable to fixed price contracts only." The cost principles which are nearing completion in the Department of Defense are a "single set" of cost principles for uniform application to both cost-type and fixed price contracts rather than a set of cost principles applicable to only fixed price contracts.

In the discussion of the organization and activities of procurement and audit agencies, some excellent advice is offered in suggesting that, insofar as possible, all problems relative to a particular contract should be anticipated and the agreements reached in connection therewith incorporated in the contract. It is also suggested that supplemental agreements and under-

standings with the contracting officer should be reduced to written contractual provisions. In this same section the author gives additional sound advice in stating that contractors should not hesitate to arrange appointments with Government supervisory personnel to clarify any areas of disagreement. Such discussions with Government procurement and audit personnel will frequently speed up the resolution of misunderstandings relative to defense contracts.

Although the discussion of the types of defense contracts is adequate, contractors should watch for the release of a complete revision of ASPR, Part 4, Section III, "Types of Contracts." Also, although no standard form has as yet been devised for the submission of cost data in all cases, on May, 1 1953, the Department of Defense issued Form DD 633, "Cost and Price Analysis Form," for use in submission of cost estimates on negotiated contracts. This form supersedes all similar forms used by the military departments and its use is mandatory after 30 November 1953.

The author's discussion of documentation on cost type contracts is no longer entirely applicable, since the new "Records Clause," which eliminates the submission of documentation by contractors, has been adopted by each of the military departments.

In the discussion of the "Cost Provisions" of the standard contract articles, the author states that contractors should attempt to have the cost principles of Section VIII, ASPR, included directly into price redetermination articles. While the application of the cost principles of Section VIII, ASPR, to price redetermination type contracts was considered for some time by industry and Department of Defense representatives, it now appears that until the "single set" of cost principles, referred to earlier, is accepted, the present Section XV, ASPR, will continue to be used as a guide in determining costs on price redetermination type contracts.

In connection with "Cost System Requirements" it should be pointed out that, in addition to the requirements noted by the author, cost-type, price redetermination, and incentive-type contracts now specifically provide that the cost system used by the contractor must yield product costs applicable to the production contract.

The author, in his discussion of "Internal Control System Requirements," presents what he calls a composite of internal control questionnaires employed by several of the military Department audit agencies. The questionnaires to which he refers have been superseded and the official department of Defense form used in the evaluation of systems of internal control is DD 673, "Survey of Contractor's Internal Controls and Accounting Practices," which was issued in October, 1952, and is a reproduction of Section 3, Chapter III of the Contract Audit Manual.

The discussion of "unallowable costs" and the detailed discussions of material, labor and overhead are quite adequate, although the detail, particularly that relative to material, seems to contradict the previous assumption by the author that the reader would have a cost accounting background.

Although amendment 1 to Defense Mobilization Order No. 11 is discussed in the chapter on "Manufacturing Overhead," its implementing Department of Defense Directive 4105.34, issued on December 10, 1952, is not mentioned. This directive provided for the establishment of three military department "Emergency Facility Depreciation Boards" which determine "true depreciation" of emergency facilities for allowance as a cost in contract pricing. Contractors owning emergency facilities should become familiar with this directive.

The discussion of terminations leaves the impression that a contractor may compute his termination claim on both the inventory basis and a total cost basis and choose the more favorable. However this is not the case, since the use of the total cost basis requires the consent of the contracting officer.

The Renegotiation Act of 1951, which expired on December 31, 1953, is discussed in elaborate detail. The comments regarding practice and procedure before the Armed Services Board of Contract Appeals are adequate, as are the discussions of Executive Order 10210, as it relates to the amendment of contracts without consideration.

Relative to income tax trends the author states that, when a tax return has been filed based on prices which are later revised in price redetermination, an amended return should be filed to give effect to the redetermined prices. However, this is not necessarily the case in instances of downward price revision, since Revenue Ruling 53 allows the use of a tax credit in determining the amount of price refund due to the procuring agency by the contractor.

The author does not include a discussion of the Department of Defense regulations regarding defense contract financing. These regulations may be of extreme importance to a contractor in arranging for supplemental capital in connection with the performance of a defense contract.

In summary, the details of "Accounting Guide for Defense Contracts" should not be read as authoritative, since the subject matter of the book is subject to constant change. However, the book is to be recommended for alerting contractors to an awareness of such publications as the *Armed Services Procurement Regulation* and the *Contract Audit Manual*. The book also contains many valuable suggestions to be followed by contractors in their dealings with Government procurement and audit personnel.

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Cost Accounting. Hadley Editorial Staff. (New York: McGraw-Hill Book Company, Inc., 1953. Pp. ix, 245, $3.50.)

This very brief introduction to cost accounting places primary emphasis upon mechanical processes. Its chief virtues are clarity and simplicity in describing step-by-step operations in the basic variations of cost accounting: job, process and standard. The objective appears to be efficient, streamlined training of persons seeking employment in junior cost accounting positions. Consequently the book is not likely to appeal to business administration students who are interested in principles

rather than procedures, or in the implications of cost accounting in relation to the work of general corporate executives. Since much of the book is devoted to detailed bookkeeping and illustration of a multitude of forms, relatively little space remains to consider the utilization of cost data in the making of managerial decisions or formulation of company policy.

In the limited sections relating to the use of cost data in setting sales prices, there appears to be an unstated assumption that products are always sold at total unit cost plus a profit allowance. Marginal costs are not mentioned. No consideration is given to the profit possibilities implicit in sales transactions at prices below total unit costs but sufficient to cover direct costs and to contribute something toward fixed overhead costs for factories operating below capacity.

The lack of emphasis on the utilization of cost data in meeting the problems of management is understandable in view of the apparent objective of the book. To present a clear and simple picture of the records, procedures, and reports of a process cost system within the space limitations of 22 pages, or to treat standard costs in 28 pages, obviously precludes the development of many aspects of the problem which are found in longer, more advanced texts.

If the objective of this text is accepted as being limited to condensed training of students in commercial "business colleges," or for terminal courses at the junior college level, the book has much to recommend it. Its brevity and clarity reflect extensive experience in summarizing the essentials of modern cost procedures. The numerous flow charts and illustrations of records, forms, and reports are skillfully integrated into the discussion in a manner which gives a feeling of authenticity and realism. Some readers may find the treatment of forms and records a bit too extensive; at times one may develop the feeling that he is reading a company instruction manual for new employees.

Chapter 6, "Job Cost Accounting Illustrated," consists entirely of one long, continuous illustration, occupying 33 pages or about one sixth of the total text material. It shows in detail the recording of transactions in a job cost system. The student is urged to trace all postings from the various books of original entry to the ledger accounts and to trace the ledger account balances to the financial statements. This type of presentation may cause the solution of problems to be more a test of the student's patience and ability to follow instructions than a challenge to his analytical or organizational abilities.

In addition to short problems for each chapter, there are three longer cycle problems, dealing respectively with job costs, process costs, and standard costs. There is also a practice set illustrating the use of job costs in a furniture factory and the conversion of the operation to a standard cost system. A full complement of standard accounting forms is supplied separately from the text for use in working out the practice set. The related materials provided also include three progress tests and a final examination of the objective type.

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Årsredovisningen i Praktiken. Per V. A. Hanner. (Stockholm: Företagsekonomiska Forskningsinstitutet, Handelshögskolan, 1953. Pp. 187. 12 Sw.Kr.)

The English equivalent of this title is *Accounting Techniques in Annual Reports*. It is the first study of this kind undertaken in Sweden and covers the annual reports of 100 selected Swedish corporations, including incorporated units of some foreign corporations but excluding banks and insurance companies. The years covered are 1949, 1950 and 1951. The study follows the general lines of *Accounting Trends and Techniques in Published Corporate Annual Reports* issued by the American Institute of Accountants, and is evidently an attempt to accomplish the same general objectives that its American counterpart does.

Five objectives of this study are specifically stated:

1. To ascertain by detailed analysis of every part of the annual reports the extent to which the reports conform to the provisions of the Stock Companies Act of 1944, and to find how these provisions have been interpreted in practice.
2. To ascertain practices regarding items or problems that have been under debate in Sweden and elsewhere.
3. To observe the treatment given items of unusual or extraordinary character.
4. To observe trends in practice outside the field of the minimum provisions of the Act.
5. To discover what might be considered generally accepted accounting principles and sound business practices.

The American reader of this study must view it against the background of the Stock Companies Act of 1944 and subsequent laws. Provisions of this act that deal with accounting require that all statements for public use must be signed by members of the board of directors and by the president. At the annual meeting these statements with the auditors' report are approved by the stockholders, after which a copy of each is filed with the Royal Patent and Registration Office, whereupon they become public documents.

By law the annual report consists of:

1. A balance sheet as of the end of the fiscal year.
2. An income statement for the year.
3. A report on the administration.

The form and content of the statements are prescribed with respect to main headings, classifications of items and particular items that must be shown individually. These requirements do not call for standard forms, but they do involve what might be called minimum disclosure.

Because the Report on the Administration is one of the main features of Swedish reporting, it merits a little fuller consideration in this review. Under the law this report shall include information on matters of importance for judging the company's position and the results of its operations to such extent as not disclosed in the other statements, and other facts of material interest to the investors to the extent that disclosure thereof might not be detrimental to the company. Certain items

in the content of this report are specified:

1. Net sales unless disclosure would be detrimental.
2. Assessed value of real estate.
3. Amount of fire insurance carried.
4. Average number of workmen and other employees during the year.
5. Wages and salaries paid workmen, the board and executives, and other employees.
6. Write up of assets, if any.
7. Changes in accounting principles used, if any.
8. Consolidated earned surplus in the case of parent companies.
9. Proposals by the president or the board of directors with respect to the disposition of income, including appropriation to reserves. The stockholders decide on dividends and appropriations to reserves at the annual meeting.

Information regarding valuation of fixed assets and inventories appears to be generally confined to this report. Rates of depreciation or changes therein may also be disclosed here, as are also changes in the methods of inventory valuation.

The Administrative Report as used in Sweden appears to replace pretty generally the copious footnotes accompanying many American statements. Since this is a part of the annual report it is likely that even the casual reader will give more careful attention than he would to a series of technically expressed footnotes.

Among debated issues in Sweden as well as elsewhere is the principle of the all inclusive income statement. The law evidently assumes the use of the all inclusive statement. However, there appear to be deviations in practice from the rigid interpretation of this principle. Deviations are of two general types: 1. Items appearing in the income statement and not shown as income or costs but as adjustments to surplus or reserves. 2. Items not appearing in connection with the income statement.

Most of the type 1 items are offsets against reserves so as not to affect the stated net profit figure. Among these are special distributions from subsidiaries, gains by merger, realized gains from the sale of real estate or investments, restored valuation reserves and adjustments to reserves that must be authorized by the stockholders.

Type 2 deviations involve release of special valuation reserves no longer required, adjustment of tax liabilities, larger special distributions from subsidiaries, reduction of fixed asset valuations, write off of good will and others.

In most cases where there were deviations from the all inclusive principle there was an adjustment of surplus or reserves that required the approval of the stockholders. In these cases such items appeared in the Report on the Administration, thus generally providing full disclosure of the items and the amounts involved.

This study shows evidence of competent and painstaking effort. For distribution to English readers the study is accompanied by a 15 page English introduction, a table of contents and a short glossary of Swedish technical accounting and business terms. An unofficial English translation of the Stock Companies Act was issued in 1949 by the bank AB Svenska Handelsbanken, Stockholm. This should be available in most law school libraires.

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A Standard Classification of Municipal Accounts. National Committee on Governmental Accounting. (Chicago: Municipal Finance Officers Association of the United States and Canada, 1953. Pp. ix, 129. $3.00.)

A Standard Classification of Municipal Accounts is Number 17 in a series of publications prepared by the National Committee on Governmental Accounting. It is a revision and an extension of their Bulletin Number 9, *A Standard Classification of Municipal Revenues and Expenditures*, published in 1939. The National Committee on Governmental Accounting is composed of representatives of the various associations interested in the improvement of management and accounting in governmental units and of representatives of the major accounting associations. Its members are aided by advisory committees on governmental accounting that exist in the individual organizations.

The categories into which financial data are to be segregated provide the framework about which any accounting system must be built. This publication presents a classification of accounts to serve as such a framework with the objective of providing accounts that are useful for budgeting, accounting and reporting by municipal governments. Because of the diversity of governmental activities and the varied amounts of emphasis placed upon such activities, a rigid chart of accounts cannot be prepared for unaltered use by all municipalities. This classification provides a list of such accounts from which the individual municipality can make a selection to fit its particular needs. Inasmuch as other organizations have provided accounting classifications for utilities, schools, hospitals and libraries, detailed lists of accounts are not included for these activities.

The major sections of *A Standard Classification of Municipal Accounts* are devoted to Balance Sheet Accounts, Revenue Accounts, and Expenditure Accounts. Each section opens with a brief explanation of the account group accompanied by a listing of the accounts included in the group. This is followed by a second listing of the accounts containing a brief explanation of each account and the type of data that should be recorded therein. Most of the explanations are limited in size, containing but one or two pertinent sentences. Illustrations of the use of the accounts are available in the National Committee's publication, *Municipal Accounting and Auditing*. This book contains journal entries and financial statements which utilize the accounts contained in the standard classification.

The major change from the earlier edition is the introduction of balance sheet accounts. This is in accordance with the National Committee's recommendation to the effect that even municipalities that do their accounting on a cash basis should prepare balance sheets. The introductory chapter contains an explanation of how an accrual basis balance sheet can be prepared from cash

basis accounts. Another addition that appears in this revision is the appendix containing a standard classification of accounts for Canadian municipalities. Minor changes, such as the elimination of some older accounts, the introduction of a few new accounts, and the amplification of some of the explanations, occur in the section pertaining to revenue accounts. Slightly more changes appear in the classification of expenditures. Additional information pertains to the integration of expenditure items in the financial statements, and there are also some reclassifications of accounts.

There is no doubt that this book and the related volume should be in the office library of every municipality and that the information contained therein should be followed as closely as possible in order to increase the standardization of municipal accounting practices. Staff members of accounting firms having municipalities as clients should be familiar with this part of generally accepted procedures in the field of municipal accounting. This book should be available to students of governmental accounting and they should be made aware of the work of the National Committee on Municipal Accounting.

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Economics

Defense and the Dollar. Albert G. Hart. (New York: Twentieth Century Fund, 1953. Pp. xiv, 203. $2.00.)

Economic Controls and Defense. Donald H. Wallace. (New York: Twentieth Century Fund, 1953. Pp. ix, 260. $2.00.)

The Twentieth Century Fund in 1950, recognizing the disturbance which defense activity had on our domestic economy, undertook a series of four studies on "how to protect and maintain the civilian economy in a period of defense mobilization." The first two of these studies, *Defense Without Inflation*, and *Financing Defense*, were reviewed in THE ACCOUNTING REVIEW of January, 1952. *Defense and the Dollar* is the third study in the series, and like the others, was written in consultation with The Twentieth Century Fund's Economic Stabilization Committee, consisting of Professors John M. Clark, Theodore W. Schultz, Arthur Smithies, and the late Donald H. Wallace. The last chapter consists of a report of the committee and its recommendations.

Defense of the value of the dollar, Professor Hart believes, is the crucial issue of our time. He indicates that economic stabilization is basic and essential to protecting the value of the dollar, and proceeds to inquire into the possibilities of transforming money and credit into a powerful economic stabilizer. Stabilization must begin by neutralizing the destabilizing forces which the monetary system itself sets up. The central problem is to keep reasonably stable the total demands for goods and services.

Bank credit is stated to be a major source of instability. A discussion of the instability of credit and of selective credit controls, with which most trained economists are familiar, is given. The conclusion is reached that only *quantitative* controls can check an inflationary growth of bank credit. Following there is an interesting survey of many types of controls possible, and the difficulties of applying them. Included are such tools as loan quotas for banks, penalty reserves on loans, loan taxes, special reserve securities, and the more familiar cash reserves restrictions. The problem of using open market operations to control bank reserves receives considerable attention, especially as regards the "Treasury line" of emphasis vs. those who think that the effect of open market policy on bank reserves should be given top priority.

The use of savings incentives for inflationary control is also emphasized and mention is made of the feeble use of debt management and salesmanship in distribution of government securities since 1945. The using of savings bonds for collateral in order to prevent cashing them in has possibilities of reducing their redemption, as Hart points out, but would certainly not keep the money supply down (pp. 107–8). The use of higher yields in return for greater penalties for early redemption of bonds probably has greater possibilities.

Other unique suggestions receiving pro and con analysis are the use of a bond, both marketable and redeemable, retirement annuities in lieu of wage increases during inflation, purchasing power guarantees, compulsory lending, and velocity of money control techniques. As to the latter, Hart believes that, "if . . . as much ingenuity went into threshing out these possibilities as into tax discussions, or even into discussions of selective credit controls, we ought to come out with a very useful list of practical measures." . . . "It is shocking how little is known about the way households and firms administer their cash balances, about their understandings with bankers as to minimum balances, lines of credit and the like" (p. 156).

The final chapter by Professor Hart on long run monetary strategy is highly suggestive and at the same time has many statements which probably will be debated by other monetary analysts. For example, " . . . the likeliest focus for a financial crisis seems to be the real estate market" (p. 158), or " . . . the Federal Reserve has been wrong a disconcertingly large part of the time" [if tight credit in inflation and easy credit in depressions is appropriate] (p. 173).

This handy volume is to be highly recommended to the intelligent layman and student who wishes a guide book on monetary policies. Considering its size, Professor Hart has done a competent job in dealing with a difficult subject.

The final volume in the defense mobilization series has turned out to be one of the last pieces of work by the late Professor Donald Wallace. It was released in July and Professor Wallace died in September. It is a study of the use and effectiveness of direct controls in a defense mobilization economy.

A long defense program averaging 10% to 25% of national production can lead to four dangers: (1) an

insufficient percentage of our resources may be devoted to defense; (2) chronic inflation may be accepted; (3) government controls needed from time to time may be permitted to harden into our institutions without realizing the issues involved; or (4) we may allow essential controls to be discredited by overuse or misuse. To avoid such dangers, the kind of analysis carried out by Professor Wallace is essential and should be understood by responsible citizens. Chapters 2 and 3 on the dangers of inflation and the dangers of direct controls are well done; the content should be grasped by anyone who loosely advocates no controls on the one hand or by those who advocate permanent and strong direct controls on the other. Academic people will appreciate the section on the damage to education by inflation (p. 36–37).

The reader is never allowed to forget that strong, indirect controls on credit and spendable funds should bear the major burden of inflation control at all times in a defense economy. Without them, direct controls could not bear the burden which they would have to shoulder. Direct controls can be used for shorter periods to deal with waves of speculative or scare buying, special scarcities of particular materials or items, and the wage-price spiral which "labor unions have power to spark." Chapters on tools of direct control deal with the importance of production programming, materials, manpower, prices and rationing, and wages. The last paragraph written by Professor Wallace is well worth quoting: "If we really fear inflation as much as sensible Americans should, we ought to do everything possible to make both government wage control and voluntary wage control effective when there is a need for one or both in the defense period. This means also, of course, that we should do all we can to make price control work, whenever it is needed, and that one should be sure to use unfaltering fiscal and credit controls all the time. These are the 'iron men' of stabilization, but there are times when direct controls are indispensable."

The final chapter (pp. 242–256), unlike the other three volumes in the series which have a report by the Fund's Economic Stabilization Committee, is a statement by Professor J. M. Clark on basic problems and policies. It in general supports the position of Professor Wallace and in addition lays emphasis on the need to have tools of direct control in readiness in case renewed waves of inflationary pressure return or full scale war develops. Clark concludes that the greatest single danger is that at times of inflationary pressure insufficient indirect controls will place on direct controls too great a burden, and will result in their being continued when they should be relaxed or suspended.

The Twentieth Century Fund is to be commended for making available the four volumes of this series. Professors Albert Hart and those who have worked with him have done a good job with a difficult subject matter. While the studies have some of the disadvantages which go with short surveys, for in numerous places further discussion would be helpful, they are well written and leave the reader much better equipped to understand the difficult and complex economic problems of our time.

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Finance

Analysis of Financial Statements. Fourth Edition. Harry G. Guthmann. (New York: Prentice-Hall, Inc., 1953. Pp. xi, 703. $7.00.)

The last previous edition of this widely-used textbook appeared in 1942. Since that date two developments with divergent effects on the adequacy and reliability of published accounting statements have occurred:

(1) The increasing trend toward uniformity in presentation of much more complete accounting data as a result of pressure from regulatory and tax agencies and the work of various committees of the accounting associations themselves.
(2) The tremendous impact of price inflation upon asset valuation and income measurement.

Because of (1), accounting techniques have become standardized largely in the interests of "full disclosure" of pertinent information to the investing public or of equity in the tax burdens of corporate enterprises. Consequently, it appeared that the accountant's task of preparing and certifying reports for S.E.C. and Internal Revenue purposes was being made considerably easier and that investors were able to rely to a greater extent than formerly upon the comparability as well as the adequacy of corporate reports.

At the same time, however, factor (2) was causing a considerable amount of questioning of what had heretofore been probably the most solidly intrenched principle of accounting, the use of historical dollar cost as the primary basis for asset valuation and income measurement. This questioning was undoubtedly influenced to some extent by corporate management's desire to minimize current tax liabilities. A more solid justification for the changing attitude toward historical cost lay in management's need for accounting information which would be most useful for the purpose of decision-making aimed at maintaining "real" capital and maximizing the "true" earnings available for corporate owners.

These developments certainly justify the revision of any standard textbook in the field of financial statement analysis.

Professor Guthmann is aware that, in the construction of financial statements, the accountant benefits from knowing the use to which the statements will be put. However, it is difficult to see how the accountant can prepare any one compromise set of financial statements which will be successful in reconciling the needs of

such various groups of users as tax and rate-making authorities, investors, and operating managements. Yet this seems to be the gist of his suggestion (p. 18) that "the accountant's work must try to reconcile the needs of the various users so as to achieve the greatest possible usefulness." It might be preferable instead to stress the desirability of preparing different statements for different purposes.

The organization of the book has not been changed from previous editions. Part I deals generally with the construction and analysis of the balance sheet and income statement, discussing at length those basic accounting principles which need to be understood in interpreting conventionally prepared statements. The author makes a reasonably adequate presentation of the case for considering the purchasing power of the dollar for managerial accounting purposes but apparently is deterred from recommending its adoption by accountants because of the difficulty and cost involved.

Part II is organized on an industry-group basis. The analysis of railroads, public utilities, mercantile and manufacturing concerns, mining companies, banks, insurance companies and holding companies is undertaken in turn. Such an arrangement suits best the needs of the student of investments and may have been chosen with that specific use in mind. Many of the problems, in the revised and extended problems section, are selected from state C.P.A. and A.I.A. examinations and stress "full disclosure" and uniformity requirements.

Professor Guthmann's book does provide a most helpful introduction to the realm of financial statement analysis. That is all that can be expected of a first-term textbook in this field.

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Statistics

Statistical Inference. Helen M. Walker and Joseph Lev. (New York: Henry Holt and Company, 1953. Pp. x, 510. $6.25.)

Statistical Inference is a two-semester introductory text in modern statistical methods intended primarily for students in education and psychology. However, the statistical techniques are applicable to many fields and examples are drawn from diverse areas. No college training in mathematics is presupposed and mathematical derivations of formulas are omitted. Explanation and extensive use is made of probability symbolism, multiple subscripts, and expressed limits of summation. Such tools, however, are necessary if the student desires to do more than merely have an aesthetic appreciation of the subject.

In developing the basic concepts of statistical inference such as populations, samples, estimation and tests of hypotheses, the authors use an approach based on simple experiments having discrete data. After considering probability distributions, inferences concerning proportions and chi-square (these having use with discrete populations), they introduce the student in chapter five to continuous distributions. Sampling distributions are developed empirically in chapter six by discussion of the drawing of samples from a normal population. The sampling distributions form the basis for inferences concerning a mean, the difference between two means (chapter seven), and variances (chapter eight). Chapters on analysis of variance, linear regression and correlation, multiple regression and correlation, analysis of covariance, non-parametric methods and several miscellaneous topics follow. The inclusion of the chapter on non-parametric methods, which was written by Professor Lincoln Moses, reflects the increased interest in such methods of recent years.

Perhaps the most important criticism of the book is the recommendation in chapter fourteen (Analysis of Variance with Two or More Variables of Classification) to pool the sums of squares of the interaction effects which test non-significant with the sum of squares for the experimental error to obtain a denominator for making the F test of main effects. Preliminary testing resulting in a decision to pool or not pool affects the significance level and the power of the F test in an unknown manner. Since the extent to which the F test is affected is unknown and can only be determined by further research, such pooling is open to serious question.

Another point open to question in the same chapter concerns the components that enter into the expected mean square for a random variable in the analysis of variance for a mixed model. In such an expected mean square, the authors include components resulting from the interaction of the random variable with the various fixed variables. The inclusion of such components is a matter of controversy in statistical circles. In the reviewer's opinion such components should not be included.

As a whole the book is well written and contains the material necessary for a basic understanding of modern day statistics.

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Taxation

Tax Court Digest. Lois G. Moore, editor. (Indianapolis: The Bobbs-Merrill Company, Inc., 1951–53. 13 vol. $180.00 plus annual charge after first year.)

The first eleven volumes contain a topical index digest of all reported decisions and appealed memorandum opinions of the Board of Tax Appeals and the Tax Court of the United States from July 16, 1924 to the date of the publication. The cases are analyzed under seventy-seven major digest topics, each section containing numerous subheadings or analysis topics. Cross references are also given to other sections and for other major subjects which were not included in the selection of topics for detailed analysis. The general arrangement is alphabetical. If a Tax Court case has been reviewed by a higher court, a digest of the action of the higher court is reported. The basic material for the Tax Court Digest has been the card index kept by Miss Moore, the librarian of the Tax Court, for the use of the judges and their assistants.

The twelfth volume is a Table of Cases in which all of the digested cases are listed in alphabetical order with a notation of the section numbers under which each case appears. Included with the official citations are citations to Commerce Clearing House and Prentice-Hall publications. The most recent position of the Commissioner as to acquiescence or nonacquiescence is indicated.

The final volume contains a list of the major digest topics, and a repetition of the subtopics or analysis topics which appear at the beginning of each digest topic section. The major part of the volume consists of a Word Index which brings together related and overlapping subjects under more headings than are found in the general arrangement. It is an attempt "to index the index, so that the differences in the minds of men as to ways of classification may be reconciled."

The set is kept up to date in two ways. Current Report pamphlets are issued every two months which contain digests of recent Tax Court cases, digests of cases appealed to higher courts, a cumulative Table of Cases and a Cumulative Index. An annual pocket supplement is also published for each volume which, in addition to the digests of Tax Court and appealed cases, contains citations to Commerce Clearing House reports of tax decisions.

This is a monumental work which in the opinion of the reviewer is a "must" for every legal and accounting office in which tax practice is carried on. Digests, however, do not replace a careful study of the cases themselves and it is unlikely that a complete list of cases bearing on a particular point can often, if ever, be prepared solely by reference to a digest. They are, nevertheless, very useful in obtaining leads to the important and pertinent cases on a praticular issue and save a great deal of research time.

It is probably inevitable that in a work of this size there will be some peculiarities or deficiencies which may be irritating and will limit its usefulness. The following points were observed in a spot check of the material. The scheme of cross references seems to be inadequate. For example, Community Property is not one of the major digest topics, but it is listed with cross references to the topics under which cases on this subject will be found. Four such references are given: Deductions—Losses, Estates and Trusts, Income and Returns, but there are also subsections on community property problems under Deductions—Bad Debts, Deductions—Contributions, Deductions—Depreciation, Deductions—Expenses of Trade or Business, Deductions—Personal Expenses, Deductions—Right to Deduction, Gifts and Gift Taxes, Husband and Wife, and Partnerships, and community property cases are found in still other sections. The Word Index section of the index volume is more complete on this topic but it fails to list the subsection on Community Property Funds to be found under Deductions—Contributions. It also includes a few items relating to communities or community organizations which seem out of place under the general heading of Community Property.

A similar situation exists in the case of bad debts. At the conclusion of the list of subsections under Deductions—Bad Debts is a reference to the one topic, Banks, but subsections on bad debts also are found under Accounting Methods, Credits, Exemptions and Exclusions, Deductions—Insurance Companies, Deductions—Reserves, Definitions, Excess Profits Tax, Income and Invested Capital. The topic Deductions—Bad Debts contains a section on Reserves and there is a section on Bad Debts under the topic Deductions—Reserves, but the cases in these two related sections are not the same, although some cases do appear in both places. Again the Word Index is more complete.

The term Capital Assets is commonly associated in tax practice with problems relating to capital gains and losses but the cases under this topic could, for the most part, properly be placed under the next topic, Capital Expenditures.

Cases on arms-length transactions, losses between related interests, etc., will be found under the appropriate but rather unexpected topic, Bona Fides. Another similar topic is Evasion and Avoidance of Taxes.

An unusual topic heading is Deductions—Exhaustion of Property, to cover such things as depreciation of patents, and amortization of leaseholds. There is another section, Deductions—Amortization, which contains similar cases.

There are no separate digest topics or sections in the Word Index for the important matters of Adjusted Gross Income, Net Operating Loss, or Improper Accumulation of Surplus.

The use of separate subclassifications for "Club Dues" and "Dues" with some of the latter relating to the problem of club dues, and only one case appearing in both places, is not the best possible classification.

The cases relating to medical expenses will be found under Deductions—Personal Expenses.

It is difficult to see why Exclusions—Exempt Interest, Exempt Corporations, etc.—were combined with Credits and Exemptions to form one digest topic.

An unusual method of alphabetizing is employed in the Table of Cases in that all of the same surnames are not necessarily together since the letters in the remainder of the name are included in the arrangement. For example: Monro, Walter J. follows Monrovia Oil Co., and Johnston, F. Harold follows Johnstone, Kate Allerton.

The important case of Waters, 12 TC 414, in which an employee was permitted to deduct travel expenses in arriving at adjusted gross income, even though he was not away from home overnight, is found only under Deductions—Expenses of Trade or Business, Traveling Expenses, Reimbursements, even though no reimbursement was involved.

On page 107 of the volume containing the topic Deductions—Expenses of Trade or Business, a c heading "(Widows)" is found but the second case pr to the beginning of this group carries the capti "Payment to Widow." Presumably it should have b included with the other "widows" cases.

Although it relates to depreciation on leased prope ty, the case of Frederick Fox & Co. 19 BTA 232, appe under the ambiguous subclassification of "Insufficie instead of a more likely nearby heading "Leased Pro erty" in the section on Deductions—Depreciation.

It is unfortunate that the usefulness of this importa work should be marred by flaws such as these.

Perry Mason
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